# A RESEARCH AGENDA FOR THE REGULATION OF NON-MEDICAL CANNABIS USE IN SWITZERLAND

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# Executive summary

## Subject matter and mandate

In Switzerland, cannabis has been illegal since 1951. Recently, decriminalizing cannabis has been discussed in the Federal Assembly. Developments in other countries received increased attention and stimulated further discussions on reforms. Regulatory approaches in other countries vary widely, but firm scientific evidence on the effects of instruments is still scarce. Some Swiss cities launched initiatives to conduct pilot trials with cannabis in order to find evidence-based alternatives to the status quo, which is marked by various inconsistencies. An initial request by the city of Bern to the Federal Office of Public Health (FOPH) was rejected in 2017 due to lack of legal basis, but contributed to the establishment of an experimental article for pilot trials with cannabis in the following years. The Ordinance on pilot trials in accordance with the Narcotics Act (BetmPV) allows cantons, municipalities, universities and other organizations to conduct pilot trials to gain scientific knowledge about alternative approaches to regulate the non-medical use of cannabis. The ordinance lists various conditions that must be met before an application is approved by the FOPH. With a view to future pilot trials, the FOPH has mandated Prof. Daniel Kübler and his team from the Department of Political Science at the University of Zurich (IPZ) to develop a research agenda focusing on new legal approaches to cannabis regulation. This agenda aims to serve as a guideline for the generation of scientific evidence related not only to the cannabis pilot trials, but also with respect to additional questions related to cannabis regulation, and to reflect on research coordination and funding.

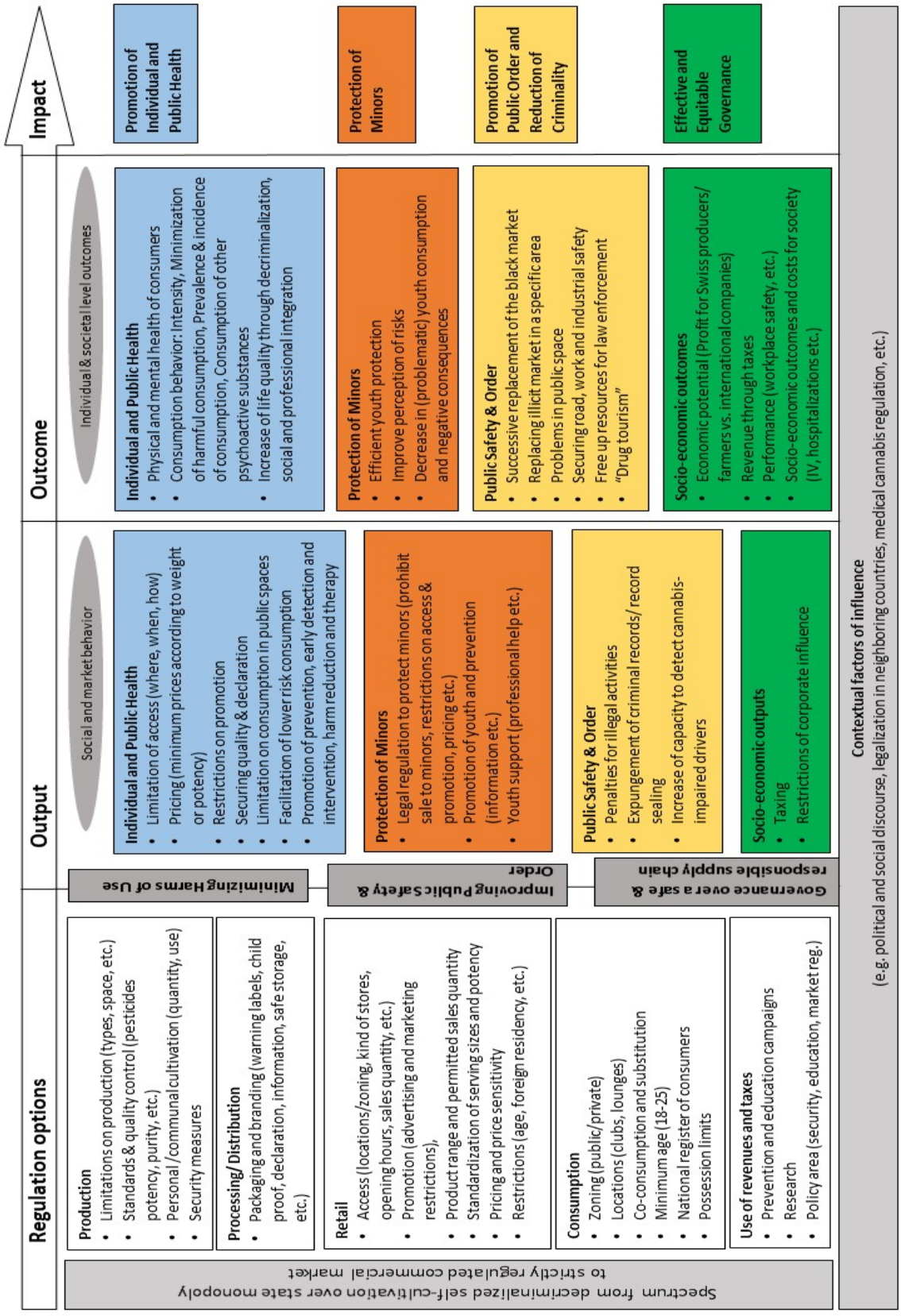
## Methodology

Four primary sources of information were used to elaborate this report. First, current English-language research and literature on the consequences of legalizing cannabis for recreational use was considered. A systematic literature search in the “Web of Science” for meta-analysis and systematic reviews yielded 36 publications, all of which were reviewed. In addition, other recently published sources with reference to cannabis regulation in other countries or cannabis and drug policy in Switzerland were included. Secondly, a relatively broad-based advisory board was established. The members of the advisory board were in frequent exchange with the authors and provided feedback on earlier versions of this report. Third, a collaboration with the Canadian Center of Substance Use and Addiction (CCSA) was established. This collaboration resulted in an international workshop entitled "Cannabis research in times of legalization: What's on the agenda", held in February 2021. Fourth, we had conversations and exchanges with various experts in Switzerland and presented drafts of the present report to the Federal commission for questions on addiction and prevention of noncommunicable diseases (EKSN) and to interested members of the Swiss School of Public Health (SSPH+) network.

## Overarching question and research fields

A wide spectrum of cannabis regulation models is theoretically conceivable, ranging from strict prohibition to a free commercial market. It is assumed that the social and health costs are particularly high at the poles of the spectrum, and an alternative in between should be sought. To work toward regulation options in this middle-ground, we are guided by the following overarching question: *Under which regulatory conditions can the social and health costs of cannabis consumption be effectively minimized?* Validated evidence from other jurisdictions is sparse, and difficulties of comparison include the context-specific nature of the evidence as well as the lack of data on the status quo. Additional knowledge on how ***the social and health costs of cannabis consumption can be effectively minimized*** is therefore needed. It is especially relevant for Switzerland, where the political debate is strongly focused on public health aspects. Drawing on the current literature, we derived three partially overlapping key fields of research that are central to effective public health-oriented cannabis regulation, which are summarized in the following overarching logic model of cannabis regulation (see following page).

*Logic model of cannabis regulation*



The first central field of research can be termed ***minimizing health and social harms of use***. In this field, it is especially the fear of negative health consequences of cannabis legalization that has inspired various scientific publications. Current research comes to varied conclusions and there seems to be a need for further investigation. Existing evidence is mainly focused on prevention efforts and less on harm reduction. Important open research questions in this field include the following:

| **Minimizing health harms and social harms of use** | |
|---|---|
| **Reduction of health harms** | <u>Physical and mental health</u><br>• *How do the different regulatory models affect the physical and mental health of consumers?*<br>• *How can the overall costs of and the demand for cannabis use be decreased?*<br>• *How can individuals with at-risk and addictive consumption be detected through regulated access to cannabis?*<br>• *What regulatory choices can be expected to have positive health effects for large parts of consumers?*<br><br><u>Consumption behavior:</u><br>• *What are the effects of different regulatory options on consumption behavior (intensity, prevalence, and incidence)?*<br>• *How can regulatory measures (e.g. opening hours, locations) be designed in order to a) strengthen prevention efforts and b) facilitate low-risk consumption while minimizing harmful consumption?*<br>• *What are the effects of different retail/sales models*?<br><br><u>Life quality & harm reduction:</u><br>• *How can regulatory measures support users' strategies of consuming cannabis in non-problematic ways and of integrating this use in their everyday life?*<br>• *What structural measures encourage informed behavioral choice and enhance the consumption competences of users? What provisions regarding "safer use guidelines" are appropriate?*<br>• *To what extent are harm reduction measures effectively implemented within the different regulatory frameworks?*<br>• *How can a regulated cannabis market enhance health literacy of cannabis consumers and prevent problematic use (information through labelling, sales counselling, and public campaigns)?*<br>• *How can the quality of life and social integration of addicted individuals be enhanced through a legally regulated access to cannabis?* |
| **Effective prevention and intervention** | • *What regulatory measures strengthen prevention efforts without pushing consumers into the illicit market?*<br>• *What regulatory measures promote screening of and early intervention with vulnerable consumers (e.g. administrative measures for youth consumers)?*<br>• *How can sex and gender related factors be integrated into regulatory frameworks?* |
| **Protection of minors** | • *What regulatory measures are important to effectively protect minors (including structural prevention measures) and therefore impede early initiation of use?*<br>• *How should prevention campaigns be designed to reduce (especially high-risk) consumption among young people and possibly facilitate lower-risk consumption for young adults (e.g. graduated potency levels for different age groups)?*<br>• *What are the effects of legalization on young people's attitude towards cannabis, their perception of risks associated with cannabis use, and their probability to initiate use (early)? Does legal access foster normalization of cannabis use?* |

| | |
|---|---|
| | • *What regulatory measures can be taken to effectively detect and support at-risk underage consumers?* |
| **Consumer safety** | • *What legal standards and quality controls regarding contaminants should be introduced (e.g. pesticides, contaminants)?*<br>• *How can the supply chain be monitored to minimize health risks and social harms?*<br>• *Can access to different cannabis products be regulated gradually according to the products' potential for harm and/or their different target groups?* |
| **Co-use of other substances** | • *Should the simultaneous sale and purchase of cannabis and alcohol be prohibited?*<br>• *How can simultaneous use of cannabis and tobacco be reduced, and transition from cannabis to tobacco be prevented?*<br>• *How should regulatory measures be designed in order to enable monitoring the production of cannabis and its quality, and ensuring its traceability*?<br>• *How does regulated access to cannabis affect the co-use of other substances?* |

The second field of research is ***improving public safety and order.*** Researchers in this area focus on the extent to which cannabis legalization affects law enforcement resources or to which regulatory options have an impact on drug-related crime and violence. A frequently studied topic are the consequences for road and occupational safety. As in the previous field, research results are inconclusive. Large-scale and long-term studies are needed, and sufficient information on the status quo is also necessary to assess the effect of regulations on the illegal market as a key issue. Central open research questions are:

| **Improving public safety and public order** | |
|---|---|
| **Criminal activities** | • *What is the influence of different regulatory options on the illegal market?*<br>• *To what extent is a legal market able to eliminate the illegal market? What conditions allow best to reach that goal?*<br>• *What are the effects of decriminalization or legalization, respectively, on criminal activities related to cannabis?* |
| **Public order and safety** | • *What measures should be taken to ensure road and workplace safety (definition of THC limits, fines, information, campaigns, controls etc.)?*<br>• *What measures can be taken to prevent cannabis-related nuisances in public spaces (e.g. number and place of outlets, opening hours)?*<br>• *How can adjustments to retail regulation lead to a reduction of cannabis-impaired driving and occupational safety risks?*<br>• *What are the effects of different regulatory models on drug-related tourism? What are the most effective strategies to minimize the negative consequences of drug-related tourism?* |
| **Policing, police organization and law enforcement** | • *What are effective approaches to prevent and detect cannabis-impaired driving (e.g. sanctions, enforcement, testing, and prevention)?*<br>• *How do different regulatory frameworks affect the resources of the law enforcement system?*<br>• *What approaches to policy coordination are the most promising (e.g., where various agencies are implicated in the policy delivery system such as police, justice, health, work inspectorate, etc.)* |

The third field of research relates to the ***governance over a safe and responsible supply chain***. The entire supply and value chain must be considered in order to effectively promote public health and safety. In this field, research is being done on production standards and regulations of self-cultivation, but even here the expected effects are by no means conclusive. The produced material needs to be processed and distributed in a safe and responsible manner. There are various regulations concerning the labeling of

products, packaging, and advertising. Furthermore, concerns regarding the structure for effective governance arise. Central unanswered questions in this field are:

| **Governance for a safe and responsible supply chain** | |
|---|---|
| **Control structure** | <u>Overarching questions</u><br>• *What are the advantages of different licensing approaches regarding cultivation, processing, and selling cannabis?*<br>• *How can future cannabis legislation and research be protected from corporate influence?*<br><br><u>Economic and equity aspects</u><br>• *What is the economic potential of an entirely or partially legalized cannabis market for Swiss producers and retailers compared to the status quo?*<br>• *What can regulators learn from the experience of alcohol and tobacco to minimize industry manipulation of legal cannabis trade?*<br>• *What regulatory options are effective in mitigating the risk of commercialization?*<br>• *What are the advantages and disadvantages of completely banning a commercial market?*<br>• *What consequences do different regulation approaches have on equity and social justice outcomes?*<br>• *How can social equity be promoted from the very beginning? What kind of programs should be developed to support the inclusion of less advantaged and disproportionally affected groups in the industry?*<br>• *What are the overall costs for society caused by the different regulatory choices (prohibition, decriminalization, legalization)?*<br><br><u>Policy implementation</u><br>• *What regulatory competences need to be situated on what state level (national, cantonal, municipal)? What are the risks and opportunities of a multi-level governance approach?*<br>• *How can coordination between cantons be improved in order to facilitate harmonization of implementation?*<br>• *How can regulations of medical and non-medical cannabis use be separated while still supporting and not hindering each other?*<br>• *How should partnerships between the state and private actors in policy delivery (professional groups, producers, etc.) be established?* |
| **Production** | • *How should the regulation of cannabis production be designed to guarantee product safety and quality and ensure the security of production systems?*<br>• *What are the effects of the legalization of home-growing and personal cultivation of cannabis? How is government oversight under such a model feasible?*<br>• *What are the regulatory options for product testing, evaluation and oversight of the production process?* |
| **Processing and distribution** | • *What provisions should be taken for the processing and distribution of cannabis?*<br>• *What kind of limitations should be implemented regarding promotion?*<br>• *How should packaging and labelling be regulated in order to match local patterns of use and promote public health goals, thereby allowing a more efficient promotion of public health goals?* |
| **Retail** | • *How should a retail system be regulated to accommodate public health and safety concerns?*<br>• *Which sale setting is most likely to make users abandon their usual (illegal) sources of supply to promote the positive effects of a new regulation?* |

| | |
|---|---|
| | • *What regulatory restrictions on sale and purchase are effective from a public health viewpoint (access and availability restrictions, rationing, purchases only up to a certain amount, etc.)?*<br>• *What are the opportunities and risks of different retail/sales models (e.g. shops vs. online sales)? Are state-run cannabis outlets preferable to commercial outlets in terms of public health?* |
| **Consumption** | • *What is the evidence of the public health effectiveness of bans on cannabis use in public spaces?*<br>• *What are advantages and disadvantages of different restrictions on the location of use from the perspective of public health and safety?*<br>• *How should locations of allowed consumption be regulated and monitored?* |
| **Pricing / Taxing** | • *How do pricing and taxing influence consumption patterns (changes in patterns of use, local priorities, etc.)?*<br>• *How can a balanced pricing and taxing structure be established that simultaneously ensures competitiveness with the illegal market and a sufficiently high price to restrict youth access and limit consumption?*<br>• *How can revenues be allocated in order to promote social equity, protect public health and strengthen research?* |

## Prioritization in the Swiss context

The cannabis debate in Switzerland mainly focuses on the regulatory approaches suitable to minimize risks and maximize benefits to public health. Within the political debate there are two viewpoints: the first emphasizes that cannabis use should be avoided altogether and therefore strictly prohibited, whereas the other welcomes the examination of alternative options, since cannabis use is a seen as a social reality. The so-called 'experimental article' for pilot trials was ultimately approved by the majority of parliament, aiming at the investigation of the central issues of cannabis regulation in an unbiased and open-ended manner. Four overarching priorities of future cannabis regulation can be derived from the debate in Switzerland as well as from international research evidence. These four priorities also form the impact dimensions in the logic model.

The first priority, ***promotion of individual and public health***, follows the aims set out in the Federal Act on Narcotics and Pychotropic Substances (NarcA) and the corresponding ordinance (BetmPV). Priority research questions in this field are the prevention of addictive disorders and high-risk consumption, the provision of necessary help and treatment for individuals at risk, the mitigation of damages to health and social harm, as well as the reduction of negative impacts on society. Firm evidence on this impact dimension is relatively scarce, as legalization in other countries is recent, transfer to the Swiss context is difficult, and measuring effects on individual and public health remains challenging.
The second priority is ***the promotion of public order and the reduction of criminality***. While it is not the primary motivation for rethinking current cannabis policy in Switzerland, displacing the illicit market is a recurring goal. In this context, special attention must be paid to the three priority areas of reducing criminal activities, improving public security and order, as well as policing, police organization and law enforcement. It seems to be of particular importance here that studies have a long-term focus and explore not only the period after an intervention, but also the status quo in order to make meaningful comparisons.

The third priority is ***the protection of minors***, since international studies do not provide clear evidence on the consequences of youth consumption, and cannabis use among Swiss adolescents is particularly high. Furthermore, the topic is virulent in political debates. The current Swiss approach to ensure effective protection of minors is based on the following three pillars: legal regulation to protect minors ("gesetzlicher Jugendschutz"), promotion of youth and prevention ("Jugendförderung") and youth

support ("Jugendhilfe"). Future research on the consequences of different cannabis regulatory approaches for these three areas are important.

The fourth and last priority is ***the establishment of an effective and equitable governance***. Legalizing access to cannabis creates a new tax base and an opportunity for a new industry, and experience from other countries shows that profit-oriented actors quickly become influential and want to influence the regulatory framework in their favor. For this reason, it seems appropriate to explore middle ground alternatives to a commercial approach, despite Switzerland's liberal tradition. In addition, questions of social justice and equality as well as on monitoring the supply chain are of particular priority.

## Cannabis pilot trials

The legal framework for future cannabis pilot trials is set out in the Ordinance on Pilot Trials under the Narcotics Act (BetmPV) of 2021. Pilot trials must provide evidence on the following topics: physical and mental health of consumers and their performance; consumption behavior; socio-economic aspects; the drug market in a specific area; protection of minors; public order and safety (Art. 2 Abs. 2 BetmPV). In addition, they must be limited in space and time and there are specifications regarding the substance to be dispensed as well as regarding participants. The FOPH is responsible for granting authorization and exercises a monitoring and control function. Several research teams in larger Swiss cities are currently giving extensive thought to research designs for future pilot trials. There are considerations about research coordination in the context of developing a common questionnaire for the participants. Research teams intend to work with different types of dispensaries (cannabis social clubs, pharmacies, kiosks, vaping stores) and partly to contrast them. Variation exists regarding how active the role of dispensaries should be during pilot trials. The considerations of the research teams are so far predominantly related to health aspects and focus on consumption. However, socioeconomic aspects and possible effects on public safety in the vicinity of dispensaries are also being addressed by some teams. Additionally, there are aspirations to investigate pricing, effects of different products and co-consumption of other substances.

Based on the considerations in connection with the logic model and the current reflections of the research teams, we developed possible research topics and questions for future pilot trials. Sales through online channels should be considered, to the extent legally possible, and their effects studied, as recent experience from other countries shows that this sales channel is on the rise. In order to study the drug market in a given area or the impact on public order and safety, similar cities could be compared and statistical methods could help estimate causal effects. Questions about co-use of other substances should be considered in interviews or surveys of participants. One approach to gain immediate evidence on the protection of minors would be to select study participants who live with minors and also interview them directly. Further questions for investigation include to what extent different product formats and variations have an impact on the health of the study participants, which product features particularly appeal to the participants, and which regulatory measures can promote lower risk consumption.

## Supplementary research and additional research needs

Some important questions can hardly be investigated in pilot trials because of the legal requirements and are therefore better suited for supplementary research. Currently, the FOPH has awarded four mandates for this purpose and is financially supporting a fifth project together with other partners. A study by *Sotomo* is investigating the general acceptance of regulatory measures and the attitude of the voting population towards cannabis. On behalf of various institutions, the *University of Geneva in collaboration with Rütter Soceco* is investigating the economic effects of cannabis. The focus here is on questions regarding the economic consequences of various regulatory models, potential tax revenues and the economic potential of a legal cannabis market for Swiss producers and retailers. The recently

published study by *IRM Basel* aimed to analyze the literature on THC limits in road traffic and to develop possible scenarios for adapting road regulation. The *ZHAW* addressed the issues of cultivation, production, and product standards to best protect consumers. The mandate to *Sucht Schweiz* is about a comparative analysis of evaluations of different regulatory policies in other countries, as many policies are still insufficiently evaluated to date.

Additional research in the area of processing and distribution is required on the effects of various product and packaging properties on consumer choice. In this context, research outside the framework of the pilot trials can deviate from the legally required specifications according to the BetmPV. Thus, additional knowledge might be gained. Relating to the theme of revenues and taxes, questions arise about the distribution of possible revenues, and about which pricing structure makes the most sense for regulation geared to promote public health. In the thematic block of public order and safety, we see a need to gain additional insights on the functioning of the illicit market, which it is hardly possible to comprehensively cover through the pilot trials. Moreover, additional research is needed on possible regulations of different types of products. In the context of youth protection, we see quasi-experimental designs on different product forms, prevention messages, and communication channels and their attractiveness to youth as a promising methodological approach. In addition, community or family-based prevention campaigns, which have been found to be effective, should be investigated more closely to determine how they can be structurally strengthened. It is also important to investigate how appropriate state control, control bodies and control measures should be designed. It is not only a question of determining who should be the licensor, but also of whether a ban on simultaneous activity in the areas of production, supply and retail is conclusive. In addition, cross-thematic research on the status quo is necessary in order to be able to assess the effects of various regulations adopted in the future. Furthermore, research is needed in the area of policy implementation, as there is often a discrepancy between formal policies and their implementation. Comparative research is also needed on the advantages and disadvantages of the various regulatory options in the middle ground between decriminalization and legalization and on the extent to which structural measures can encourage informed behavioral choices and guide users towards less problematic ways of consumption.

## Research coordination and funding

We distinguish three ideal-typical models of research funding and coordination, differing particularly in how strongly the content of the research is steered. The *political funding scheme* directly serves the interests of government and aims to answer practical questions and to develop implementable solutions. The *science-based funding scheme* starts from the research questions central to the disciplines, is often detached from policy-related debates and runs the risk of incoherent research efforts. The *strategic funding scheme*, as the third ideal type, pursues all promising research avenues in the relevant domains, addressing not only questions identified by academia, but also questions related to the policy-related perspective.

Although the legal basis excludes a political funding scheme for the cannabis pilot trials, a look at experiences with coordination and funding regarding the medical prescription of heroin helps to identify success factors. In this case, the cantons, municipalities and private organizations were responsible for implementing the trials, and the federal government provided the financial resources for the scientific evaluation. A group of researchers was mandated to define and implement an overall research plan. Trials were not approved by the FOPH until a commitment was made to collect data using a common standardized questionnaire administered to study participants.

For the cannabis pilot trials, the scenario of decentralized research funding and self-coordination is currently emerging as a more realistic viable path. The federal government evaluates and approves research projects and collects the results, but does not play an active role in research production or

funding. There are several possible donors in Switzerland for the financing of such a *science-based funding scheme*. The SNSF (Swiss National Science Foundation) is certainly the most important independent agency for research funding. Besides the possibility to submit individual applications for single projects, there are National Centres of Competence in Research (NCCRs) for established researchers with long-term research programs, Sinergia for interdisciplinary research of several research teams, and various instruments to enable international research collaborations. Several independent foundations also provide financial support for scientific projects. In addition, independent funds exist in the tobacco and alcohol sector that also support research in the field of substance use and addiction. The potential of conflicts of interest is a known problem in this area. Independence from possible industrial interests and preventing conflicts of interest is thus central for future cannabis research funding and can be strengthened by following some central principles. It is also conceivable that researcher-driven research coordination be oriented towards Open Science principles, which would guarantee transparency of the research process and public availability of data, among other benefits.

Under the given conditions, we see a realistic chance for stronger coordination in the determination of a standard cannabis unit size, the development of a common core questionnaire for the participants and the creation of a common platform for data pooling and sharing, in which the raw data and results are made accessible. Coordination is strongly dependent on a well-connected research community and currently we do not see a multi-site or multi-center study as a realistic option, but stronger support from the FOPH including funding for research coordination could be helpful. The obvious instrument for a more strategically oriented funding scheme would be the SNSF's National Research Programs (NRPs). NRPs are *strategic funding schemes* precisely in that they explicitly promote research in a specific problem area the government considers relevant. If expedient, the focus of such a NRP might be expanded to issues surrounding the use of other substances and addiction.

## Recommendations

*Development of a cross-project research methodology*

1. In international research, a standardized core questionnaire is sometimes used, to which modules can optionally be added to address the specific conditions in the relevant country or region. By analogy, we recommend the development of a core questionnaire for Switzerland with supplementary modules that take greater account of the situation of the drug market in a particular area, for instance.

2. While some pilot trials appear to be using similar questions and items, a common set of questions with core items does not exist so far. We recommend that the FOPH contributes to a cross-project research methodology by supporting researchers' endeavors towards a common questionnaire or some agreed-upon core questions.

3. We recommend the determination of a standard cannabis unit size, a common core questionnaire for study participants and a common platform for data pooling and sharing as steps towards a cross-project research methodology.

*Coordination of research projects (pilot trials)*

4. Public and media scrutiny for the cannabis pilot trials and research can be expected to be intense. We therefore recommend that researchers coordinate in developing a sound public and political communication strategy.

5. Besides the commonly-discussed alternatives, prohibition and the standard commercial model, theoretically there are many middle-ground options of cannabis regulation, which are rarely implemented in practice. We therefore recommend that more research be conducted in Switzerland on

these middle ground options, which are still little researched internationally. These seem to have the potential to significantly reduce health and social costs.

6. Within the framework of the pilot trials, the FOPH performs various functions and is first and foremost an authorization and control body. Conflicts of interest are inevitable, and we therefore recommend a clarification of the FOPH's role in order to better support pilot trials in the future.

*Research funding*

7. A science-based funding scheme or a strategic funding scheme via SNSF grants might be viable options for research funding, while the legal basis precludes direct funding by the federal government. In order to increase the chances of funding applications, we recommend greater cooperation with international experts to identify relevant research gaps and ensure international relevance.

8. The Alcohol and Tobacco Prevention Funds, with their organizational and financial setups, represent interesting funding vehicles to which stakeholders interested in evidence-based research for the purpose of policy making should look.

9. To ensure the independence of research and its credibility and to prevent undue industry influence on research activities, researchers should adhere to some guiding principles for avoiding conflicts of interest in cannabis-related research funding (e.g. no industry influence on funding decisions, freedom to publish research results).

10. Independent foundations could play a critical role in funding pilot studies, provided the foundation's purpose is met. Coordination in this area (e.g. a central consulting office for the funding of cannabis research) could support the various research teams in seeking financial contributions from foundations and other actors.

# Zusammenfassung

## Gegenstand und Auftrag

In der Schweiz ist Cannabis seit 1951 verboten. In letzter Zeit wurde die Entkriminalisierung in der Bundesversammlung diskutiert. Entwicklungen in anderen Ländern fanden erhöhte Aufmerksamkeit und regten weitere Diskussionen über Reformen an. In diesen Ländern kommen sehr unterschiedliche Regulierungsansätze zur Anwendung, wobei noch wenig gesicherte wissenschaftliche Erkenntnisse hinsichtlich der Auswirkungen der verschiedenen Ansätze vorliegen. Einige Schweizer Städte haben erste Initiativen zur Durchführung von wissenschaftlichen Pilotversuchen mit Cannabis lanciert, um evidenzbasierte Alternativen zum aktuellen Status quo zu finden, der von diversen Widersprüchen geprägt ist. Das erste Gesuch, das die Stadt Bern beim Bundesamt für Gesundheit (BAG) eingereicht hat, wurde im Jahr 2017 wegen fehlender Rechtsgrundlage abgelehnt. Jedoch trug es dazu bei, dass in den folgenden Jahren das Betäubungsmittelgesetz durch einen Experimentierartikel für Pilotversuche mit Cannabis ergänzt wurde. Die Verordnung über Pilotversuche nach dem Betäubungsmittelgesetz (BetmPV) erlaubt es Kantonen, Gemeinden, Universitäten und anderen Organisationen, Pilotversuche zur Zwecke der Gewinnung wissenschaftlicher Erkenntnisse über alternative Ansätze zur Regulierung der nicht-medizinischen Anwendung von Cannabis durchzuführen. In der Verordnung sind verschiedene Bedingungen aufgeführt, die für die Bewilligung des Gesuchs durch das BAG erfüllt sein müssen. Im Hinblick auf zukünftige Pilotversuche hat das BAG Prof. Daniel Kübler und sein Team vom Institut für Politikwissenschaft an der Universität Zürich (IPZ) mit der Entwicklung einer Forschungsagenda beauftragt, die sich auf neue rechtliche Ansätze der Cannabisregulierung fokussiert. Diese Agenda soll als Richtlinie für die Schaffung wissenschaftlicher Evidenz nicht nur in Bezug auf die Pilotversuche mit Cannabis, sondern auch hinsichtlich weiterer Fragen der Cannabisregulierung dienen und zur Reflexion über die Forschungskoordination und -finanzierung beitragen.

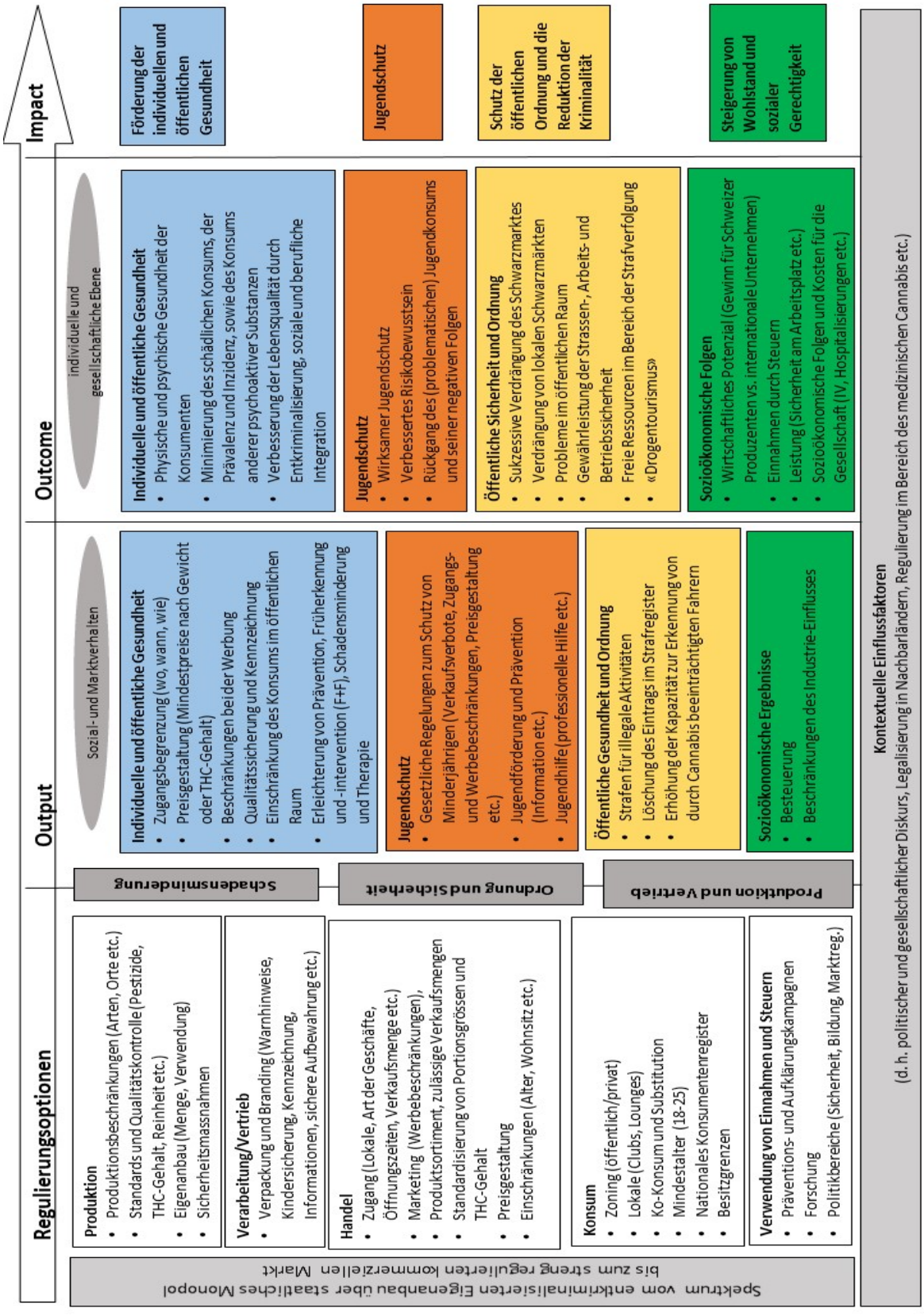
## Methodisches Vorgehen

Bei der Ausarbeitung dieses Berichts wurden hauptsächlich vier Informationsquellen verwendet. Erstens wurden die aktuelle internationale Forschungsliteratur im Hinblick auf mögliche Konsequenzen der Legalisierung von Cannabis zu Genusszwecken herangezogen. Eine Literaturrecherche nach Meta-Analysen und systematischen Reviews im «Web of Science» brachte 36 Publikationen hervor, die anschliessend allesamt gesichtet wurden. Zudem wurden weitere kürzlich erschienene Publikationen mit Bezug zur Cannabisregulierung in anderen Ländern oder zur Cannabis- und Drogenpolitik in der Schweiz einbezogen. Zweitens wurde eine relativ breit aufgestellte Begleitgruppe etabliert. Die Mitglieder der Begleitgruppe tauschten sich regelmässig mit den Autorinnen und Autoren aus und gaben Feedback zu früheren Versionen dieses Berichts. Drittens wurde eine Zusammenarbeit mit dem Canadian Center of Substance Use and Addiction (CCSA) etabliert. Im Rahmen dieser Zusammenarbeit wurde im Februar 2021 ein Workshop mit dem Titel «Cannabis research in times of legalization: What's on the agenda» durchgeführt. Viertens haben wir uns mit verschiedenen Expertinnen und Experten in der Schweiz ausgetauscht und Entwürfe des vorliegenden Berichts der Eidgenössischen Kommission für Fragen zu Sucht und Prävention nichtübertragbarer Krankheiten (EKSN) sowie interessierten Mitgliedern des SSPH+-Netzwerks (Swiss School of Public Health) vorgelegt, um zusätzliche Rückmeldungen einzuholen.

## Übergeordnete Fragestellung und Forschungsfelder

Theoretisch ist ein breites Spektrum an Modellen zur Cannabisregulierung vorstellbar, das von einer strikten Prohibition bis hin zu einem unregulierten freien Markt reicht. Es wird angenommen, dass die sozialen und gesundheitlichen Kosten an den Polen des Spektrums besonders hoch sind und daher eine dazwischenliegende Regulierungsoption angestrebt werden sollte. Bei der Erarbeitung gemässigter

*Wirkungsmodell der Cannabisregulierung*



Regulierungsoptionen lassen wir uns von der folgenden übergeordneten Frage leiten: Unter welchen regulatorischen Bedingungen können die sozialen und gesundheitlichen Kosten des Cannabiskonsums wirksam minimiert werden? Es liegt wenig validierte Evidenz aus anderen Ländern oder Regionen vor. Zudem wird der Vergleich durch den starken Kontexbezug der wissenschaftlichen Evidenz sowie das Fehlen von Daten zum Status quo erschwert. Es sind weitere Erkenntnisse darüber erforderlich, wie die sozialen und gesundheitlichen Kosten des Cannabiskonsums wirksam minimiert werden können. Für die Schweiz, wo in der politischen Debatte ein starker Fokus auf Aspekte der öffentlichen Gesundheit gerichtet ist, ist dies besonders wichtig. Bezugnehmend auf die aktuelle Literatur haben wir drei sich teilweise überschneidende zentrale Forschungsbereiche abgeleitet, die von entscheidender Bedeutung für eine wirksame, auf die öffentliche Gesundheit ausgerichtete Cannabisregulierung sind und im vorstehenden Wirkungsmodell der Cannabisregulierung zusammengefasst wurden.

Das erste Forschungsfeld fokussiert auf die ***Verminderung gesundheitlicher und sozialer Schäden durch den Konsum***. In diesem Feld ist es insbesondere die Angst vor negativen gesundheitlichen Auswirkungen der Legalisierung von Cannabis, die den Anlass zu verschiedenen wissenschaftlichen Arbeiten gab. Die aktuelle Forschung kommt zu unterschiedlichen Ergebnissen und es scheint Bedarf an weiteren Untersuchungen zu bestehen. Die vorliegende Evidenz fokussiert sich vornehmlich auf Präventionsbemühungen und weniger auf die Schadensminderung. Zu den wichtigen offenen Forschungsfragen in diesem Bereich gehören:

| ***Verminderung gesundheitlicher und sozialer Schäden des Cannabiskonsums*** | |
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| **Verminderung gesundheitlicher Schäden** | Physische und psychische Gesundheit<br>• *Wie wirken sich die unterschiedlichen Regulierungsmodelle auf die physische und psychische Gesundheit der Konsumentinnen und Konsumenten aus?*<br>• *Wie können die gesellschaftlichen Kosten des Cannabiskonsums und die Nachfrage nach Cannabis reduziert werden?*<br>• *Wie können Personen mit risikoreichem Konsum oder Abhängigkeit durch einen regulierten Zugang zu Cannabis erreicht werden?*<br>• *Bei welchen regulatorischen Entscheidungen sind positive Gesundheitseffekte für viele Konsumentinnen und Konsumenten zu erwarten?*<br>Konsumverhalten:<br>• *Welche Auswirkungen haben unterschiedliche Regulierungsoptionen auf das Konsumverhalten (Intensität, Prävalenz und Inzidenz)?*<br>• *Wie können regulatorische Massnahmen (beispielsweise Öffnungszeiten, Örtlichkeiten) gestaltet werden, um a) die Präventionsbemühungen zu stärken und b) einen risikoarmen Konsum zu ermöglichen, während der schädliche Konsum minimiert wird?*<br>• *Welche Auswirkungen haben verschiedene Handels-/Vertriebsmodelle?*<br>Lebensqualität und Schadensminderung:<br>• *Wie können regulatorische Massnahmen die Strategien der Konsumentinnen und Konsumenten unterstützen, Cannabis auf unproblematische Weise zu konsumieren und diesen Konsum in ihren Alltag zu integrieren?*<br>• *Welche strukturellen Massnahmen fördern informierte Konsumentscheidungen und stärken die Konsumkompetenzen der Konsumentinnen und Konsumenten? Welche Auflagen betreffend «Safer-Use-Regeln» sind angemessen?* |

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| | • *Inwieweit werden Massnahmen zur Schadensminderung innerhalb der verschiedenen Regulierungsmodelle effektiv umgesetzt?*<br>• *Wie kann ein regulierter Cannabismarkt die Gesundheitskompetenz der Cannabiskonsumentinnen und -konsumenten verbessern und einen problematischen Konsum verhindern (Information durch Kennzeichnung, Verkaufsberatung und öffentliche Kampagnen)?*<br>• *Wie kann eine Verbesserung der Lebensqualität und der sozialen Integration von süchtigen Personen durch einen gesetzlich geregelten Zugang zu Cannabis erreicht werden?* |
| **Wirksame Prävention und Intervention** | • *Welche regulatorischen Massnahmen stärken die Präventionsbemühungen, ohne die Konsumierenden in den Schwarzmarkt zu drängen?*<br>• *Welche regulatorischen Massnahmen fördern das Screening von und die frühzeitige Intervention bei besonders gefährdeten Konsumentinnen und Konsumenten (beispielsweise administrative Massnahmen für jugendliche Konsumierende)?*<br>• *Wie können geschlechts- und genderbezogene Faktoren in den regulatorischen Rahmen integriert werden?* |
| **Jugendschutz** | • *Welche regulatorischen Massnahmen sind für die Gewährleistung eines wirksamen Jugendschutzes und damit der Verhinderung eines frühen Einstieges in den Konsum wichtig (einschliesslich struktureller Präventionsmassnahmen)?*<br>• *Wie sollten Präventionskampagnen gestaltet werden, um den (vor allem risikoreichen) Konsum unter Jugendlichen zu reduzieren und möglicherweise einen risikoarmen Konsum für junge Erwachsene zu erleichtern (beispielsweise abgestufte Potenzlevel für verschiedene Altersgruppen)?*<br>• *Welche Auswirkungen hat die Legalisierung auf die Einstellung, die Jugendliche zu Cannabis haben, ihre Wahrnehmung der mit dem Cannabiskonsum verbundenen Risiken und die Wahrscheinlichkeit eines (frühen) Einstiegs in den Konsum? Begünstigt der legale Zugang die Normalisierung des Cannabiskonsums?*<br>• *Welche regulatorischen Massnahmen können ergriffen werden, damit gefährdete minderjährige Konsumentinnen und Konsumenten effektiv erkannt und unterstützt werden?* |
| **Verbrauchersicherheit** | • *Welche gesetzlichen Standards und Qualitätskontrollen in Bezug auf Verunreinigungen sollten eingeführt werden (beispielsweise Pestizide, Schadstoffe)?*<br>• *Wie kann die Lieferkette so überwacht werden, dass gesundheitliche Risiken und soziale Schäden minimiert werden?*<br>• *Kann der Zugang zu verschiedenen Cannabisprodukten entsprechend ihrem Schadenspotenzial und/oder ihrer unterschiedlichen Zielgruppen graduell reguliert werden?* |
| **Ko-Konsum anderer Substanzen** | • *Sollte es ein Verbot des gleichzeitigen Verkaufs und Kaufs von Cannabis und Alkohol geben?*<br>• *Wie kann der gleichzeitige Konsum von Cannabis und Tabak reduziert und der Wechsel von Cannabis zu Tabak verhindert werden?*<br>• *Wie sollten regulatorische Massnahmen ausgestaltet sein, um die Überwachung der Cannabisproduktion und -qualität zu ermöglichen und die Rückverfolgbarkeit zu gewährleisten?* |

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| | • *Wie wirkt sich der regulierte Zugang zu Cannabis auf den Ko-Konsum anderer Substanzen aus?* |

Das zweite Forschungsfeld ist die ***Verbesserung der öffentlichen Ordnung und Sicherheit.*** Forscherinnen und Forscher, die in diesem Bereich tätig sind, fokussieren sich darauf, inwieweit sich die Legalisierung von Cannabis auf die Ressourcen der Strafverfolgungsbehörden auswirkt oder welche Regulierungsoptionen eine Auswirkung auf Drogenkriminalität und Gewalt haben. Ein häufig untersuchtes Thema sind auch die Folgen für die Sicherheit im Strassenverkehr und am Arbeitsplatz. Wie auch im zuvor beschriebenen Feld sind die Forschungsergebnisse nicht schlüssig. Grossangelegte Langzeitstudien sowie ausreichende Informationen zum Status quo sind zur Beurteilung der Schlüsselfrage der Auswirkung von Regulierungen auf den Schwarzmarkt erforderlich. Die zentralen offenen Forschungsfragen sind:

| ***Verbesserung von öffentlicher Ordnung und Sicherheit*** | |
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| **Kriminelle Aktivitäten** | • *Welchen Einfluss haben verschiedene Regulierungsoptionen auf den Schwarzmarkt?*<br>• *Inwiefern ist ein legaler Markt in der Lage, den Schwarzmarkt zu eliminieren? Welche Bedingungen sind am besten geeignet, um dieses Ziel zu erreichen?*<br>• *Welche Auswirkungen haben eine Entkriminalisierung oder eine Legalisierung auf kriminelle Aktivitäten im Zusammenhang mit Cannabis?* |
| **Öffentliche Ordnung und Sicherheit** | • *Welche Massnahmen sollten ergriffen werden, um die Sicherheit im Strassenverkehr und am Arbeitsplatz zu gewährleisten (Definition von THC-Grenzwerten, Bussen, Information, Kampagnen, Kontrollen etc.)?*<br>• *Welche Massnahmen können ergriffen werden, um cannabisbedingte Störfaktoren im öffentlichen Raum zu verhindern (beispielsweise Anzahl und Ort der Abgabestellen, Öffnungszeiten)?*<br>• *Wie können Anpassungen der Regulierungen betreffend Einzelhandel zu einer Verringerung der Risiken für das Autofahren unter Cannabiseinfluss und die Sicherheit am Arbeitsplatz führen?*<br>• *Welche Auswirkungen haben die verschiedenen Regulierungsmodelle auf den Drogentourismus? Welche Strategien zeigen die beste Wirkung hinsichtlich der Minimierung der negativen Folgen des Drogentourismus?* |
| **Polizeiarbeit, Polizeiorganisation und Strafverfolgung** | • *Welche Ansätze zur Verhinderung und Erkennung von Cannabis-beeinträchtigtem Fahren (beispielsweise Sanktionen, Strafverfolgung, Tests und Prävention) sind wirksam?*<br>• *Wie wirken sich unterschiedliche rechtliche Rahmenbedingungen auf strafverfolgungsbehördliche Ressourcen aus?*<br>• *Welche Ansätze zur Koordination von Policies sind am erfolgversprechendsten (beispielsweise wenn verschiedene Behörden in System der Implementierung von Policies mitwirken, wie Polizei, Justiz, Gesundheit, Arbeitsinspektion etc.)?* |

Das dritte Forschungsfeld bezieht sich auf die ***wirksame Steuerung von Produktion und Vertrieb*** von Cannabisprodukten. Die gesamte Liefer- und Wertschöpfungskette muss berücksichtigt werden, um einen wirksamen Schutz der öffentlichen Gesundheit zu erreichen. In diesem Bereich wird an Produktionsstandards und Vorgaben für den Eigenanbau geforscht, jedoch sind auch hier die zu erwartenden Auswirkungen keineswegs eindeutig. Das produzierte Material muss auf sichere und verantwortungsvolle Art und Weise weiterverarbeitet und verteilt werden. Es gibt unterschiedliche Regulierungen betreffend die Kennzeichnung von Produkten, die Verpackung und die Werbung. Zentrale unbeantwortete Fragen in diesem Feld sind:

| *Wirksame Steuerung von Produktion und Vertrieb* | |
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| **Kontrollstruktur** | Übergreifende Fragen<br>• *Welche Vorteile haben verschiedene Lizenzierungsansätze hinsichtlich des Anbaus, der Verarbeitung und des Verkaufs von Cannabis?*<br>• *Wie kann die zukünftige Cannabisgesetzgebung und -forschung vor Einfluss seitens der Industrie geschützt werden?*<br>Wirtschaftliche Aspekte<br>• *Wie gross ist das wirtschaftliche Potenzial eines vollständig oder teilweise legalisierten Cannabismarktes für Schweizer Produzenten und Händler im Vergleich zum Status quo?*<br>• *Welche Schlussfolgerungen können die Regulierungsbehörden aus den Erfahrungen mit Alkohol und Tabak ziehen, um die Manipulation des legalen Cannabishandels durch die Industrie zu minimieren?*<br>• *Welche regulatorischen Optionen können das Risiko der Kommerzialisierung wirksam mindern?*<br>• *Welche Vor- und Nachteile hätte ein vollständiges Verbot eines kommerziellen Marktes?*<br>• *Was sind die Folgen verschiedener Regulierungsmodelle hinsichtlich Verteilungsgerechtigkeit?*<br>• *Wie kann gesellschaftliche Gleichberechtigung von Beginn an gefördert werden? Wie können benachteiligte Gruppen von Produktion und Vertrieb von Cannabisprodukten profitieren?*<br>• *Welches sind gesamtgesellschafltiche Kosten verschiedener Regulierungsmodelle?*<br>Umsetzungsmassnahmen<br>• *Welche regulatorischen Kompetenzen müssen auf welcher staatlichen Ebene (national, kantonal, kommunal) angesiedelt werden? Welche Risiken und Chancen gehen mit einem Multi-Level-Governance-Ansatz einher?*<br>• *Wie kann die Koordination zwischen den Kantonen verbessert werden, um die Harmonisierung der Umsetzung zu erleichtern?*<br>• *Wie können Regelungen zum medizinischen und nicht-medizinischen Cannabiskonsum getrennt werden, sodass sie sich gegenseitig begünstigen und nicht behindern?*<br>• *Wie sollten Partnerschaften zwischen dem Staat und privaten Akteuren (Berufsgruppen, Produzenten etc.) bei der Umsetzung von Massnahmen ausgestaltet werden?* |
| **Produktion** | • *Wie sollte die Regulierung der Cannabisproduktion ausgestaltet sein, um Produktsicherheit und -qualität zu gewährleisten und die Sicherheit der Produktionssysteme zu gewährleisten?*<br>• *Welche Auswirkungen hat die Legalisierung des Eigenanbauson Cannabis? Wie kann im Rahmen eines solchen Modells die staatliche Aufsicht erfolgen?*<br>• *Welche regulatorischen Optionen bestehen in den Bereich der Produktprüfung, der Evaluierung und der Aufsicht über den Produktionsvorgang?* |
| **Verarbeitung und Vertrieb** | • *Welche Vorkehrungen sollten für die Verarbeitung und den Vertrieb von Cannabis getroffen werden?*<br>• *Welche Einschränkungen sollten im Hinblick auf die Werbung eingeführt werden?*<br>• *Wie sollten Verpackung und Kennzeichnung reguliert werden, um den lokalen Nutzungsmustern zu entsprechen und die Ziele der öffentlichen Gesundheit effizienter zu verwirklichen?* |

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| **Handel** | • *Wie sollte ein Handelssystem reguliert werden, um den Belangen der öffentlichen Gesundheit und Sicherheit Rechnung zu tragen?*<br>• *In welcher Verkaufssituation ist die Wahrscheinlichkeit am grössten, dass die Konsumentinnen und Konsumenten ihre üblichen (illegalen) Bezugsquellen aufgeben, sodass die positiven Effekte einer neuen Regelung gefördert werden?*<br>• *Welche regulatorischen Einschränkungen für Verkauf und Kauf sind im Hinblick auf die öffentliche Gesundheit effektiv (Einschränkungen betreffend Zugänglichkeit und Verfügbarkeit, Rationierung, Kauf nur bis zu einer bestimmten Menge, etc.)?*<br>• *Welche Chancen und Risiken bringen die unterschiedlichen Einzelhandels-und Verkaufsmodelle (beispielsweise Shops vs. Online-Verkauf) mit sich? Sind staatlich geführte Cannabis-Abgabestellen im Hinblick auf die öffentliche Gesundheit den kommerziellen Abgabestellen vorzuziehen?* |
| **Konsum** | • *Welche Belege für die gesundheitliche Wirksamkeit von Verboten des Cannabiskonsums im öffentlichen Raum liegen vor?*<br>• *Welche Vor- und Nachteile haben die verschiedenen Einschränkungen hinsichtlich des Konsumorts für die öffentliche Gesundheit und Sicherheit?*<br>• *Wie sollten die Regulierung und Überwachung der erlaubten Konsumorte ausgestaltet sein?* |
| **Preisgestaltung/ Besteuerung** | • *Wie beeinflussen Preisgestaltung und Besteuerung den Konsum (Veränderungen der Konsummuster, lokale Prioritäten etc.)?*<br>• *Wie kann eine ausgewogene Preis- und Besteuerungsstruktur geschaffen werden, die gleichzeitig gegenüber dem Schwarzmarkt wettbewerbsfähig ist und einen ausreichend hohen Preis sicherstellt, um den Zugang von Jugendlichen zu begrenzen und den Konsum einzuschränken?* |

## Priorisierung im Schweizer Kontext

Die Cannabisdebatte in der Schweiz konzentriert sich vorwiegend auf regulatorische Ansätze, die das Potenzial haben, Risiken zu minimieren und den Nutzen für die öffentliche Gesundheit zu maximieren. In der politischen Debatte gibt es verschiedene Standpunkte: der erste betont, dass der Cannabiskonsum komplett vermieden werden und daher streng verboten sein sollte, während der zweite die Prüfung von Alternativen zur Prohibition begrüsst, da der Cannabiskonsum als eine gesellschaftliche Realität zu betrachten sei. Der so genannte «Experimentierartikel» für Pilotversuche wurde schliesslich von der Mehrheit des Parlaments gutgeheissen, mit dem Ziel, die zentralen Fragen der Cannabisregulierung unvoreingenommen und ergebnisoffen zu untersuchen. Aus der Debatte in der Schweiz sowie aus internationalen Forschungsergebnissen lassen sich vier übergreifende prioritäre Fragestellungen zur zukünftigen Cannabisregulierung ableiten. Diese vier Themenfelder bilden auch die Grundlage des erstellten Wirkungsmodells.

Die erste Priorität, die ***Förderung der individuellen und öffentlichen Gesundheit***, folgt den im Bundesgesetz über die Betäubungsmittel und die psychotropen Stoffe (BetmG) und der entsprechenden Verordnung (BetmPV) festgelegten Zielen. Zentrale Forschungsfragen in diesem Bereich sind die Prävention von Suchterkrankungen und risikoreichem Konsum, die Bereitstellung notwendiger Hilfe und Behandlungsmöglichkeiten für gefährdete Personen, die Minderung gesundheitlicher und sozialer Schäden sowie die Reduktion negativer Auswirkungen auf die Gesellschaft. Belastbare Erkenntnisse zu dieser Wirkungsdimension sind relativ rar, da Cannabis in anderen Ländern erst kürzlich legalisiert wurde, die Übertragung auf den Schweizer Kontext schwierig ist und die Bestimmung der Auswirkungen auf die individuelle und öffentliche Gesundheit anspruchsvoll bleibt.

Die zweite Priorität ist der ***Schutz der öffentlichen Ordnung und die Reduzierung der Kriminalität***. Während die Verdrängung des Schwarzmarktes nicht die vordergründige Motivation für das

Überdenken der aktuellen Cannabispolitik darstellt, handelt es sich hierbei um ein Ziel, das wiederholt thematisiert wird. In diesem Kontext muss besonderes Augenmerk auf die drei Schwerpunktbereiche Verminderung krimineller Aktivitäten, Verbesserung der öffentlichen Sicherheit und Ordnung, sowie Polizeiarbeit, Polizeiorganisation und Strafverfolgung gelegt werden. Hierbei scheint es von besonderer Bedeutung zu sein, dass Studien einen langfristigen Fokus haben und nicht nur die Zeit nach einer Intervention, sondern auch den Status quo betrachten, um sinnvolle Vergleiche zu ermöglichen.

Die dritte Priorität ist der ***Jugendschutz***, da internationale Studien keine eindeutigen Erkenntnisse hinsichtlich der Auswirkungen verschiedener Regulierungsmodelle auf den Cannabiskonsum von Jugendlichen liefern und der Cannabiskonsum unter Schweizer Jugendlichen besonders verbreitet ist. Zudem spielt dieses Thema auch eine wesentliche Rolle in politischen Debatten. In der Schweiz basiert der aktuelle Ansatz zur Gewährleistung eines wirksamen Jugendschutzes auf den folgenden drei Säulen: gesetzlicher Jugendschutz, Jugendförderung sowie Jugendhilfe. Zukünftiger Forschung zu den Folgen unterschiedlicher Cannabis-Regulierungsansätze für diese drei Bereiche kommt eine grosse Bedeutung zu.

Die vierte und letzte Priorität ist die ***Steigerung von Wohlstand und sozialer Gerechtigkeit***. Die Legalisierung des Zugangs zu Cannabis ebnet den Weg für neue Steuereinnahmen sowie für den Aufbau einer neuen Industrie, und die Erfahrung aus anderen Ländern zeigt, dass profitorientierte Akteure schnell Einfluss gewinnen und den regulatorischen Rahmen zu ihren Gunsten beeinflussen wollen. Daher scheint es trotz der liberalen Tradition der Schweiz angebracht, gemässigte Alternativen zu einem kommerziellen Ansatz zu erkunden. Zudem kommt Fragen der sozialen Gerechtigkeit und Gleichberechtigung sowie der Überwachung der Lieferkette eine besondere Bedeutung zu.

## Pilotversuche mit Cannabis

Die Verordnung über Pilotversuche nach dem Betäubungsmittelgesetz (BetmPV) von 2021 definiert den rechtlichen Rahmen für zukünftige Pilotversuche mit Cannabis. Pilotversuche müssen insbesondere Erkenntnisse liefern zu den Auswirkungen auf die physische und psychische Gesundheit der Konsumentinnen und Konsumenten sowie auf deren Leistungsfähigkeit, das Konsumverhalten, sozioökonomische Aspekte, den Drogenmarkt eines bestimmten Gebiets, den Jugendschutz oder die öffentliche Ordnung und Sicherheit (Art. 2 Abs. 2 BetmPV). Sie müssen örtlich und zeitlich begrenzt sein. Zudem gibt es Vorgaben zur abzugebenden Substanz sowie zu den Teilnehmerinnen und Teilnehmern. Das BAG ist zuständig für die Erteilung der Bewilligung und übt eine Überwachungs- und Kontrollfunktion aus. Mehrere Forschungsteams in grösseren Schweizer Städten arbeiten derzeit intensiv an Forschungsdesigns für zukünftige Pilotversuche. Es gibt Überlegungen zur Forschungskoordination im Zusammenhang mit der Entwicklung eines gemeinsamen Fragebogens für die Teilnehmerinnen und Teilnehmer. Forschungsteams beabsichtigen, mit verschiedenen Abgabestellen (beispielsweise in Cannabis Social Clubs, in Apotheken, Kiosken, Vaping-Stores) zu arbeiten und diese teilweise zu vergleichen. Es bestehen unterschiedliche Auffassungen darüber, wie aktiv die Rolle der Abgabestellen im Rahmen der Pilotversuche sein sollte. Die bisherigen Überlegungen der Forschungsteams befassten sich vorwiegend mit gesundheitlichen Aspekten und fokussieren sich auf den Konsum. Einige Teams beschäftigen sich auch mit sozioökonomischen Aspekten sowie mit möglichen Auswirkungen auf die öffentliche Sicherheit in der Umgebung von Abgabestellen. Zudem gibt es Bestrebungen, die Preisgestaltung, die Auswirkungen verschiedener Produkte und den Ko-Konsum anderer Substanzen zu untersuchen.

Ausgehend von den Erwägungen, die im Zusammenhang mit dem Wirkungsmodell stehen, sowie den aktuellen Überlegungen der Forschungsteams, haben wir mögliche Forschungsthemen und -fragen für zukünftige Pilotversuche entwickelt. Verkäufe über Onlinekanäle sollten, soweit gesetzlich möglich, ebenfalls berücksichtigt und ihre Auswirkungen untersucht werden, da aktuelle Erfahrungen aus

anderen Ländern zeigen, dass dieser Vertriebskanal auf dem Vormarsch ist. Zur Untersuchung des Drogenmarktes eines bestimmten Gebiets oder der Auswirkungen auf die öffentliche Ordnung und Sicherheit könnten Vergleiche zwischen ähnlichen Städten angestellt und die kausalen Auswirkungen mit Hilfe statistischer Methoden geschätzt werden. Fragen zum Ko-Konsum anderer Substanzen sollten in Interviews oder Befragungen der Teilnehmerinnen und Teilnehmer berücksichtigt werden. Ein Ansatz zur direkten Erkenntnisgewinnung betreffend Jugendschutz besteht darin, Studienteilnehmerinnen und Studienteilnehmer auszuwählen, die mit Minderjährigen zusammenleben, und diese auch direkt zu befragen. Weitere zu untersuchende Fragestellungen sind, inwiefern verschiedene Produktformate und -variationen sich auf die Gesundheit der Studienteilnehmerinnen und Studienteilnehmer auswirken, welche Produktmerkmale die Teilnehmerinnen und Teilnehmer besonders ansprechen und welche regulatorischen Massnahmen zur Förderung eines risikoärmeren Konsums beitragen können.

## Weiterer Forschungsbedarf im Rahmen von Ressortforschung

Einige wichtige Fragen können im Rahmen von Pilotversuchen aufgrund gesetzlicher Anforderungen kaum untersucht werden und eignen sich daher besser für Ressortforschungsprojekte. Aktuell hat das BAG vier Mandate vergeben und es beteiligt sich gemeinsam mit anderen Partnern an der finanziellen Unterstützung eines fünften Projekts. Eine Studie von *Sotomo* untersucht die allgemeine Akzeptanz von Regulierungsmassnahmen sowie die Haltung der Stimmbevölkerung zu Cannabis. Die *Universität Genf* befasst sich *zusammen mit Rütter Soceco* im Auftrag verschiedener Institutionen mit den wirtschaftlichen Auswirkungen von Cannabis. Fragen nach den wirtschaftlichen Folgen verschiedener Regulierungsmodelle, möglichen Steuereinnahmen, und das wirtschaftliche Potenzial eines legalen Cannabismarktes für Schweizer Produzenten und Händler stehen hierbei im Fokus. Die jüngst veröffentlichte Studie des *IRM Basel* zielte darauf, die Literatur hinsichtlich der THC-Grenzwerte im Strassenverkehr zu analysieren und mögliche Szenarien für die Anpassung der Strassenverkehrsordnung zu entwickeln. Die *ZHAW* befasste sich mit dem Anbau, der Produktion und den Produktionsstandards zur Gewährleistung des optimalen Verbraucherschutzes. Ein Auftrag an *Sucht Schweiz* umfasst eine vergleichende Analyse von Evaluationen verschiedener Regulierungsmassnahmen in anderen Ländern, da für viele Massnahmen derzeit noch keine ausreichende Beurteilung vorliegt.

Weiterer Forschungsbedarf im Bereich der Verarbeitung und des Vertriebs von Cannabis betrifft die Auswirkungen unterschiedlicher Produkt- und Verpackungseigenschaften auf die Verbraucherwahl. In diesem Kontext kann Forschung, die jenseits des Rahmens von Pilotversuchen stattfindet, von den gesetzlich festgelegten Bestimmungen der BetmPV abweichen. Dadurch könnten zusätzliche Erkenntnisse gewonnen werden. Bezüglich der Thematik Einnahmen und Steuern stellt sich die Frage nach der Verteilung möglicher Einnahmen und danach, welche Preisstruktur im Rahmen einer gesundheitsfördernden Regulierung am sinnvollsten ist. Im Bereich Öffentliche Ordnung und Sicherheit sehen wir eine Notwendigkeit zur Gewinnung zusätzlicher Erkenntnisse über die Funktionsweise des Schwarzmarktes, was durch die Pilotversuche kaum umfassend abgedeckt werden kann. Zudem müssen die möglichen Regulierungen für verschiedene Produkttypen erforscht werden. Betreffend Jugendschutz sind wir der Ansicht, dass quasi-experimentelle Designs zu unterschiedlichen Produktformen, Präventionsbotschaften und Kommunikationskanälen sowie deren Attraktivität für Jugendliche einen vielversprechenden methodischen Ansatz darstellen. Ferner sollten gemeinschafts-- oder familienbasierte Präventionskampagnen, die sich als wirksam erwiesen haben, genauer untersucht werden, um zu bestimmen, wie sie strukturell gestärkt werden können. Es wäre zudem wichtig zu untersuchen, wie angemessene staatliche Kontrolle, Kontrollorgane und Kontrollmassnahmen ausgestaltet werden sollten. Dabei geht nicht nur um die Frage, wer Lizenzgeber sein sollte, sondern auch darum, ob ein Verbot der gleichzeitigen Tätigkeit in den Bereichen Produktion, Lieferung und Handel angezeigt ist. Darüber hinaus ist eine themenübergreifende Untersuchung des Status quo

erforderlich, um die Auswirkungen verschiedener zukünftiger Regelungen beurteilen zu können. Weiter besteht Forschungsbedarf im Bereich der Implementation, da oft eine Diskrepanz zwischen formalen Richtlinien und deren Umsetzung besteht. Auch zu den Vor- und Nachteilen der unterschiedlichen Regulierungsoptionen, die eine mittlere Position zwischen Entkriminalisierung und Legalisierung einnehmen, sowie dazu, inwiefern strukturelle Massnahmen informierte Verhaltensentscheidungen fördern und Konsumentinnen und Konsumenten zu weniger problematischem Konsumverhalten hinführen können, sind vergleichende Untersuchungen erforderlich.

## Forschungskoordination und -finanzierung

Wir unterscheiden drei idealtypische Modelle der Forschungsfinanzierung und -koordination, die sich insbesondere dahingehend unterscheiden, wie stark die Forschungsinhalte gesteuert werden. Das *politische Finanzierungssystem* steht im direkten Dienst der Interessen der Politik und zielt auf die Beantwortung praktischer Fragen und die Entwicklung umsetzbarer Lösungen ab. Das *wissenschaftsbasierte Finanzierungssystem* geht von den aus wissenschaftlicher Sicht wichtigsten Forschungsfragen aus, ist oftmals losgelöst von politikbezogenen Debatten und geht mit der Gefahr von disparaten und inkohärenten Forschungsaktivitäten einher. Das *strategische Finanzierungssystem* verfolgt als dritter Idealtypus alle vielversprechenden Forschungsansätze in den relevanten Bereichen und adressiert nicht nur Fragen, die von der Wissenschaft identifiziert wurden, sondern auch solche, die sich aus ein politikbezogenen Perspektive ergeben.

Obwohl die gesetzlichen Grundlagen ein politisches Finanzierungssystem für die Pilotversuche mit Cannabis ausschliessen, können aus Erfahrungen, die mit der Koordination und Förderung von Forschung bei der Etablierung der Heroingestützten Behandlung (HegeBe) gemacht wurden, Erfolgsfaktoren abgeleitet werden. In diesem Fall waren Kantone, Gemeinden und private Organisationen dafür verantwortlich, die Versuche durchzuführen, während der Bund die finanziellen Mittel für die wissenschaftliche Evaluation bereitstellte. Eine Gruppe von Forscherinnen und Forschern wurde damit beauftragt, einen Forschungsplanzu definieren und umzusetzen. Das BAG genehmigte Versuche nur, wenn sie mit der Verpflichtung einhergingen, mitttelseines gemeinsamen standardisierten Fragebogens für die Studienteilnehmerinnen und Studienteilnehmer Daten zu erheben.

Für die Pilotversuche mit Cannabis zeichnet sich derzeit das Szenario einer dezentralen, wissenschaftsbasierten Forschungsfinanzierung und Selbstkoordination ab. Der Bund evaluiert und genehmigt Forschungsprojekte und sammelt die Ergebnisse, spielt aber keine aktive Rolle bei der Forschungsproduktion oder -finanzierung. In der Schweiz gibt es mehrere mögliche Geldgeber, die für die Finanzierung eines solchen *wissenschaftsbasierten Finanzierungssystems* in Frage kommen. Der SNF (Schweizerischer Nationalfonds zur Förderung der wissenschaftlichen Forschung) ist sicherlich die wichtigste unabhängige Agentur für Forschungsförderung. Neben der Möglichkeit, individuelle Gesuche für einzelne Projekte einzureichen, gibt es Nationale Forschungsschwerpunkte (NFS) für etablierte Forscherinnen und Forscher mit langfristigen Forschungsvorhaben, Sinergia für interdisziplinäre Forschung mehrerer Forschungsteams, und verschiedene Instrumente zur Ermöglichung internationaler Forschungskooperationen. Wissenschaftliche Projekte werden zudem von mehreren unabhängigen Stiftungen finanziell unterstützt. Darüber hinaus gibt es im Tabak- und Alkoholbereich unabhängige Fonds, die die Forschung betreffend Substanzgebrauch und Sucht ebenfalls unterstützen. Die Problematik potenzieller Interessenkonflikte ist ein bekanntes Problem in diesem Bereich. Die Unabhängigkeit gegenüber möglichen Interessen der Industrie sowie die Vermeidung von Interessenkonflikten ist für die zukünftige Förderung der Cannabisforschung ebenfalls von zentraler Bedeutung und kann durch die Einhaltung einiger Prinzipien gefestigt werden. Es ist auch denkbar, dass sich die wissenschaftsbasierte Forschungskoordination an den Grundsätzen der Offenen Wissenschaft (Open Science) orientiert. Diese würden neben anderen Vorzügen die Transparenz des Forschungsprozesses und die öffentliche Verfügbarkeit von Daten gewährleisten.

Unter den gegebenen Bedingungen sehen wir eine realistische Chance für eine stärkere Koordination in den drei Bereichen der Festlegung einer Cannabis-Standardeinheit, der Entwicklung eines gemeinsamen Basisfragebogens für die Teilnehmerinnen und Teilnehmer sowie der Schaffung einer gemeinsamen Plattform für das Pooling und den Austausch von Daten, in der die Rohdaten und Ergebnisse zugänglich gemacht werden. Die Koordination ist im erheblichen Masse von einer gut vernetzten Forschungsgemeinschaft abhängig, und aktuell würde unserer Ansicht nach eine an mehreren Orten stattfindende Studie (Multi-Site oder Multi-Center Study) keine realistische Option darstellen. Eine stärkere Unterstützung seitens des BAG einschliesslich der Finanzierung von Aktivitäten der Forschungskoordination könnte sich dabei allerdings als hilfreich erweisen. Das naheliegende Instrument für eine stärkere strategische Ausrichtung der Finanzierung wären die Nationalen Forschungsprogramme (NFP) des SNF. Bei den NFP handelt es sich gerade deshalb um *strategische Finanzierungsinstrumente*, weil sie explizit die Forschung in einem bestimmten Problembereich, den der Bund als relevant betrachtet, unterstützen. Gegebenenfalls könnte der Fokus eines solchen NFP auf Themen rund um den Konsum anderer Substanzen sowie die Sucht erweitert werden.

## Empfehlungen

*Ausarbeitung einer projektübergreifenden Forschungsmethodik*

1. In der internationalen Forschung kommen oft standardisierte Basisfragebögen zur Anwendung, welche optional um Module erweitert werden können, die auf spezifische Bedingungen des jeweiligen Landes oder der Region eingehen. Entsprechend empfehlen wir für die Pilotversuche die Entwicklung eines gesamtschweizerischen Basisfragebogens mit ergänzenden Modulen, die beispielsweise die Situation des Drogenmarktes in einem bestimmten Gebiet stärker berücksichtigen.

2. Während einige Pilotversuche ähnliche Fragen und Items anzuwenden scheinen, liegt derzeit kein einheitlicher Fragensatz mit Basis-Items vor. Wir empfehlen, dass das BAG sich an der Ausarbeitung einer projektübergreifenden Forschungsmethodik beteiligt, indem es die Anstrengungen der Forscherinnen und Forscher zur Erarbeitung eines einheitlichen Fragebogen oder einige vereinbarte Basis-Fragen unterstützt.

3. Als Schritte auf dem Weg zu einer projektübergreifenden Forschungsmethodik empfehlen wir die Festlegung einer Cannabis-Standar-Konsumeinheit, eines gemeinsamen Basisfragebogens für die Studienteilnehmerinnen und Studienteilnehmer sowie einer gemeinsamen Plattform für das Pooling und den Austausch von Daten.

*Koordination von Forschungsprojekten (Pilotversuche)*

4. Es ist davon auszugehen, dass die Pilotversuche mit Cannabis sowie die damit zusammenhängende Forschung von einer intensiven öffentlichen und medialen Aufmerksamkeit begleitet werden. Aus diesem Grund empfehlen wir, dass Forscherinnen und Forscher bei der Entwicklung einer stimmigen öffentlichen und politischen Kommunikationsstrategie koordiniert vorgehen.

5. Abgesehen von den häufig diskutierten Alternativen der Cannabisregulierung - der Prohibition und dem kommerziellen Standardmodell - gibt es theoretisch zahlreiche andere Optionen, die sich zwischen diesen Polen ansiedeln. Diese werden in der Praxis jedoch selten umgesetzt. Daher empfehlen wir, dass in der Schweiz mehr Forschung zu diesen international noch wenig untersuchten Mittelweg-Optionen betrieben wird. Diese scheinen das Potenzial zu haben, die gesundheitlichen und sozialen Kosten erheblich zu senken.

6. Im Rahmen der Pilotversuche mit Cannabis nimmt das BAG verschiedene Funktionen wahr und ist in erster Linie als Genehmigungs- und Kontrollorgan tätig. Interessenkonflikte sind unvermeidlich.

Daher empfehlen wir eine Klärung der Rolle des BAG, um Pilotversuche in Zukunft besser zu unterstützen.

*Forschungsfinanzierung*

7. Ein wissenschaftsbasiertes oder ein strategisches Finanzierungssystem mittels SNF-Förderungsbeiträgen können einen gangbaren Weg für die Forschungsfinanzierung darstellen, während die direkte Finanzierung durch den Bund von den gesetzlichen Grundlagen ausgeschlossen wird. Um die Chancen der Förderungsgesuche zu erhöhen, empfehlen wir eine stärkere Zusammenarbeit mit internationalen Experten. So können relevante Forschungslücken identifiziert und die internationale Relevanz sichergestellt werden.

8. Akteure, die an evidenzbasierter Forschung zum Zwecke der Politikgestaltung interessiert sind, sollten zudem die Alkohol- und Tabakpräventionsfonds im Auge behalten, da diese mit ihren organisatorischen und finanziellen Strukturen interessante Finanzierungsinstrumente darstellen.

9. Um die Unabhängigkeit der Forschung sowie ihre Glaubwürdigkeit sicherzustellen und eine unzulässige Beeinflussung der Forschungsaktivitäten durch die Industrie zu verhindern, sollten sich Forscher an einige grundlegende Prinzipien zur Vermeidung von Interessenkonflikten bei der Cannabis-bezogenen Forschungsförderung halten (zum Beispiel keine Beeinflussung von Finanzierungsentscheidungen durch die Industrie, Freiheit hinsichtlich der Publikation von Forschungsergebnissen).

10. Sofern der Stiftungszweck erfüllt ist, können unabhängige Stiftungen eine massgebliche Rolle bei der Förderung von Pilotstudien spielen. In diesem Bereich könnte die Koordination (zum Beispiel eine zentrale Beratungsstelle für die Finanzierung der Cannabisforschung) die unterschiedlichen Forschungsteams bei der Suche nach Zuwendungen von Stiftungen und anderen Akteuren unterstützt.

# Résumé


## Sujet et Mandat

En Suisse, le cannabis est illégal depuis 1951. Récemment, sa décriminalisation a fait l'objet de débats au sein de l'Assemblée fédérale. Les évolutions observées dans d'autres pays ont été davantage suivies et ont alimenté les discussions au sujet des réformes de la réglementation. Les approches en la matière sont très variées, mais il y a encore peu de données scientifiques solides sur les effets des instruments mis en place. De premières initiatives d'essais pilotes portant sur le cannabis ont été lancées par des villes suisses afin de trouver de nouvelles solutions fondées sur des données probantes pour remplacer les dispositifs actuels, marqués par un certain nombre d'incohérences. Une requête initiale de la ville de Berne déposée auprès de l'Office fédéral de la santé publique (OFSP) a été rejetée en 2017 faute de base légale mais a contribué à l'établissement d'un article de loi provisoire pour les essais pilotes sur le cannabis au cours des années suivantes. L'ordonnance sur les essais pilotes au sens de la loi sur les stupéfiants (OEPStup) permet ainsi aux cantons, aux communes, aux universités et à d'autres organisations de mener des essais pilotes visant à renforcer les connaissances scientifiques concernant la réglementation de la consommation de cannabis à des fins non médicales. Elle fixe plusieurs conditions nécessaires à l'approbation d'une demande d'essai par l'OFSP. En vue de ces futurs essais, l'OFSP a mandaté le professeur Daniel Kübler et son équipe de l'Institut de science politique de l'Université de Zurich (IPZ) pour élaborer un agenda de recherche concernant les nouvelles approches de la réglementation du cannabis. Celui-ci doit servir de guide pour la production de données scientifiques non seulement sur les essais pilotes concernant le cannabis mais aussi sur les questions plus larges relatives à la réglementation du cannabis, et permettre une réflexion sur la coordination et le financement de la recherche.

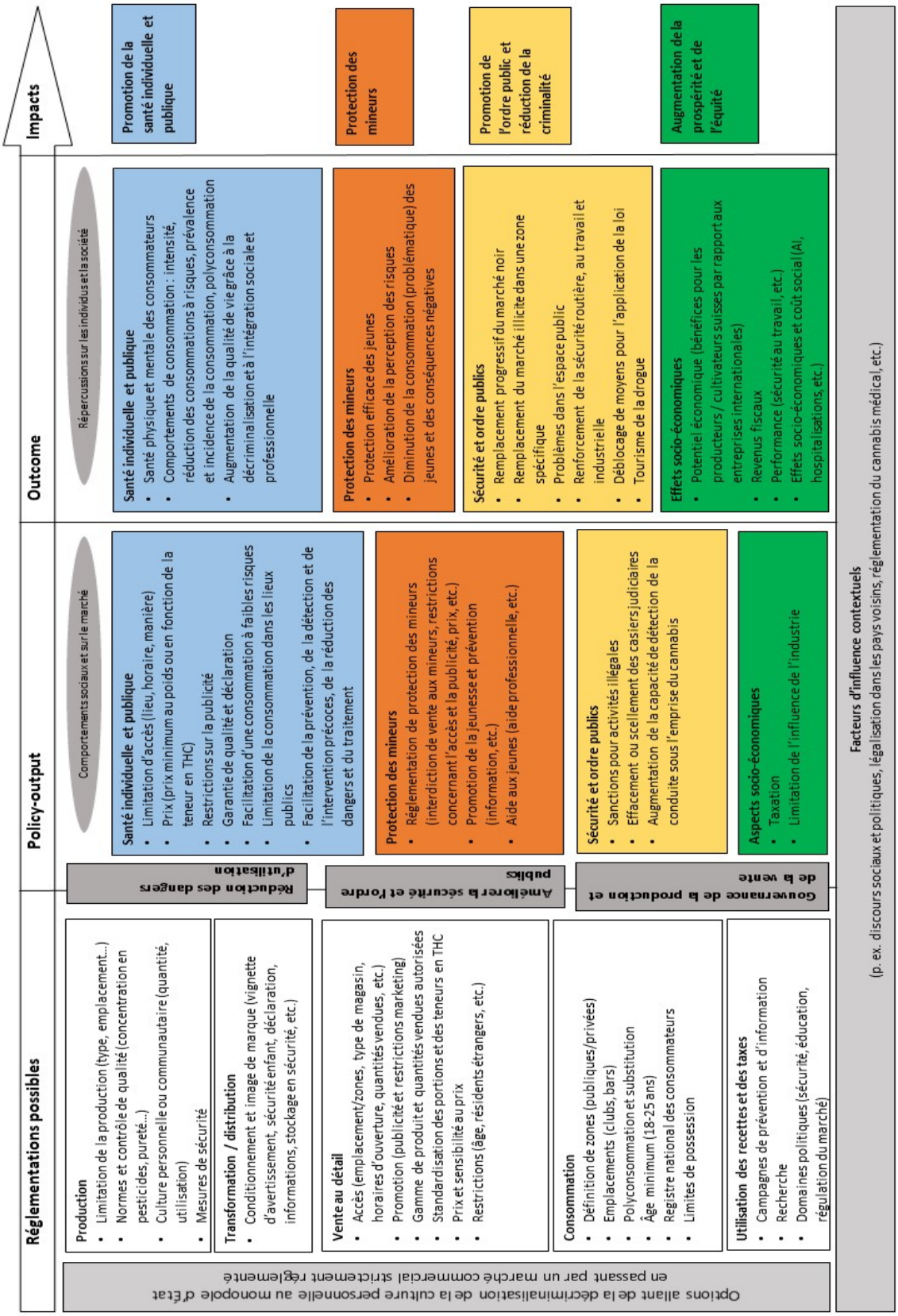
## Méthodologie

Quatre sources d'information principales ont été utilisées pour élaborer le présent rapport. Premièrement, la recherche en langue anglaise sur les conséquences de la légalisation du cannabis à usage récréatif a été étudiée. Une recherche de méta-analyses et des revues systématiques dans le « Web of Science » a permis d'identifier 36 études qui ont toutes été examinées par la suite. Par ailleurs, d'autres publications récentes sur la réglementation du cannabis à l'étranger ou sur celle des stupéfiants en Suisse ont été prises en compte. Deuxièmement, un conseil consultatif a été constitué pour accompagner ce projet. Des échanges ont eu lieu avec celui-ci, et ses membres ont été appelés à faire des retours sur les versions précédentes de ce rapport. Troisièmement, une collaboration a été établie avec le Centre canadien sur les dépendances et l'usage de substances (CCDUS) et a donné lieu en février 2021 à la tenue d'un atelier international conjoint intitulé « Cannabis research in times of legalization: What's on the agenda » (La recherche sur le cannabis à l'ère de la légalisation : ce qui est au programme). Quatrièmement, nous avons mené des discussions et des échanges avec divers spécialistes en Suisse, et avons transmis des versions de travail du présent rapport à la Commission fédérale pour les questions liées aux addictions et à la prévention des maladies non transmissibles (CFANT) et aux membres de la Swiss School of Public Health (SSPH+) intéressés.

## Question centrale et domaines de recherche

De nombreux modèles de réglementation du cannabis sont concevables en théorie, allant de la prohibition stricte à un marché commercial libre. On peut supposer que les coûts sociaux et sanitaires sont particulièrement élevés aux deux extrémités de ce spectre et qu'il serait donc judicieux de trouver une solution intermédiaire. Pour ce faire, nous avons été guidés par une question centrale : *quel cadre réglementaire permettrait de réduire efficacement les coûts sociaux et sanitaires de la consommation de cannabis ?* Les preuves scientifiques concernant ce qui se fait dans d'autres contextes règlementaires sont rares. De plus, la nature contextuelle des preuves et le manque de données sur la situation actuelle, entre autres, rendent les comparaisons difficiles. Il est donc nécessaire de recueillir davantage de connaissances

***Modèle logique de la réglementation du cannabis***



concernant les ***moyens de réduire efficacement les coûts sanitaires et sociaux de la consommation de cannabis***. Cela est particulièrement important en Suisse, où le débat est fortement axé sur la santé publique. Une analyse de la littérature récente a permis d'établir trois domaines de recherche fondamentaux pour réglementer efficacement le cannabis du point de vue de la santé publique se recoupant en partie et s'inscrivant dans un modèle logique général de réglementation (voir page précédente)

Le premier domaine est la ***réduction des dangers d'utilisation sur les plans sanitaire et social***. Dans ce domaine, c'est en particulier la crainte des conséquences négatives sur la santé de la légalisation du cannabis qui a inspiré de nombreuses publications scientifiques. Il n'y a actuellement pas de consensus et il semble donc que des recherches complémentaires soient nécessaires. Les données existantes portent essentiellement sur les efforts de prévention et concernent peu la réduction des dangers. Les principales questions en suspens dans la recherche ont trait aux aspects suivants :

| ***Réduire les dangers d'utilisation du Cannabis sur les plans sanitaire et social*** | |
|---|---|
| **Réduction des risques pour la santé** | <u>Santé physique et mentale</u><br>• *Comment les différents modèles réglementaires influent-ils sur la santé physique et mentale des consommateurs ?*<br>• *Comment réduire le coût social global et la demande en cannabis ?*<br>• *Comment les individus dépendants et ayant une consommation à risques peuvent-ils être détectés par le biais d'un accès réglementé au cannabis ?*<br>• *Quelles réglementations sont susceptibles d'avoir des effets positifs sur une grande partie des consommateurs ?*<br><br><u>Comportements de consommation :</u><br>• *Quelles sont les répercussions des différentes options réglementaires sur les comportements de consommation (intensité, prévalence et incidence) ?*<br>• *Comment élaborer des dispositions réglementaires (horaires d'ouverture, emplacements, etc.) permettant d'une part de renforcer les efforts de prévention et d'autre part de faciliter une consommation peu risquée tout en réduisant la consommation dangereuse ?*<br>• *Quels sont les effets des différents modèles de vente du cannabis ?*<br><br><u>Qualité de vie et réduction des dangers :</u><br>• *Comment les dispositions réglementaires peuvent-elles soutenir les démarches de consommation non problématiques et les intégrer à la vie quotidienne des consommateurs ?*<br>• *Quelles mesures structurelles encouragent les choix comportementaux éclairés et améliorent les connaissances des consommateurs sur leur consommation ? Quelles dispositions sont pertinentes dans le cadre de « directives pour une consommation plus sûre » ?*<br>• *Dans quelle mesure les dispositifs de réduction des dangers sont-ils effectivement mis en œuvre au sein des différents cadres réglementaires ?*<br>• *Comment un marché du cannabis réglementé peut-il renforcer les connaissances en matière de santé des consommateurs de cannabis et prévenir les usages problématiques (étiquetage, conseils de vente, campagnes de prévention) ?*<br>• *Comment un accès légal réglementé au cannabis peut-il améliorer la qualité de vie et l'intégration sociale des personnes dépendantes ?* |
| **Prévention et actions efficaces** | • *Quelles dispositions réglementaires permettent de renforcer les efforts de prévention sans pousser les consommateurs à recourir au marché illégal ?* |

| | |
|---|---|
| | • *Quelles dispositions réglementaires favorisent la détection des consommateurs vulnérables et la mise en œuvre d'actions auprès de ces derniers (mesures administratives pour les jeunes consommateurs p. ex.) ?*<br>• *Comment des facteurs liés au sexe et au genre peuvent-ils être intégrés au cadre réglementaire ?* |
| **Protection des mineurs** | • *Quelles dispositions réglementaires (y compris mesures structurelles de prévention) sont importantes pour protéger efficacement les mineurs et empêcher une consommation précoce ?*<br>• *Comment élaborer des campagnes de prévention permettant de réduire la consommation des jeunes (en particulier lorsqu'elle comprend des risques élevés) et éventuellement de faciliter une consommation peu risquée chez les jeunes adultes (p. ex. avec des teneurs en THC progressives en fonction de l'âge) ?*<br>• *Quels sont les effets de la légalisation sur l'attitude des jeunes à l'égard du cannabis, sur leur perception des risques associés à la consommation et sur la probabilité qu'ils commencent (tôt) à en consommer ? Un accès légal favorise-t-il la normalisation de la consommation de cannabis ?*<br>• *Quelles dispositions réglementaires peuvent être prises pour détecter et aider efficacement les consommateurs mineurs à risques ?* |
| **Sécurité des consommateurs** | • *Quelles normes juridiques et quels contrôles de qualité doivent être mis en place concernant d'éventuels contaminants (pesticides, p. ex.) ?*<br>• *Comment contrôler la chaîne d'approvisionnement de manière à réduire les risques sanitaires et sociaux ?*<br>• *L'accès aux différents produits du cannabis peut-il faire l'objet d'une réglementation progressive en fonction du potentiel danger qu'ils représentent pour leur public cible ?* |
| **Polyconsommation** | • *La vente et l'achat simultanés de cannabis et d'alcool doivent-ils être interdit ?*<br>• *Comment diminuer la consommation simultanée de tabac et de cannabis et prévenir le passage du cannabis au tabac ?*<br>• *Comment élaborer des dispositions réglementaires permettant de surveiller la production de cannabis et sa qualité, et d'assurer sa traçabilité ?*<br>• *Quelles sont les répercussions d'un accès réglementé sur la polyconsommation ?* |

Le deuxième domaine de recherche est l'***amélioration de la sécurité et de l'ordre public***. Les scientifiques cherchent ici à déterminer dans quelle mesure la légalisation du cannabis influe sur les moyens mis en œuvre aux fins d'application de la loi ou quelles solutions réglementaires ont une incidence sur la criminalité et la violence liées aux drogues. Les conséquences sur la sécurité routière et au travail font fréquemment l'objet de recherches, mais là aussi, les résultats ne sont pas concluants. Des études de grande ampleur et au long cours sont nécessaires. De même, il faudrait davantage d'informations sur le statu quo afin de déterminer les effets de nouvelles réglementations sur le marché illégal, qui sont un enjeu central. Les grandes questions ouvertes concernent les points suivants :

| *Améliorer la sécurité et l'ordre public* | |
|---|---|
| **Activités criminelles** | • *Quelle est l'influence des différentes solutions de réglementation sur le marché illégal ?*<br>• *Dans quelle mesure un marché légal peut-il éliminer le marché illégal ? Quelles modalités permettraient au mieux d'atteindre cet objectif ?*<br>• *Quels sont les effets respectifs de la décriminalisation et de la légalisation sur les activités criminelles liées au cannabis ?* |
| **Ordre public et sécurité** | • *Quelles mesures faudrait-il prendre pour que la sécurité routière et au travail soient assurées (définitions de taux limites de THC, amendes, information, campagnes de prévention, contrôles, etc.) ?*<br>• *Quelles mesures peuvent être prises pour prévenir les nuisances liées au cannabis dans les espaces publics (p. ex. nombre et emplacement des points de vente, horaires d'ouverture) ?*<br>• *Comment réduire les risques sur la route et au travail liés au cannabis en ajustant la réglementation sur la vente au détail ?*<br>• *Quelles sont les répercussions des différents modèles de réglementation sur le tourisme associé à la drogue ? Quelles sont les stratégies les plus efficaces pour diminuer les conséquences négatives du tourisme associé à la drogue ?* |
| **Maintien de l'ordre, organisation policière et application de la loi** | • *Quelles approches sont efficaces pour prévenir et détecter la conduite sous l'emprise du cannabis (p. ex. sanctions, maintien de l'ordre, tests, prévention) ?*<br>• *Quelles sont les répercussions des différents cadres réglementaires sur les moyens nécessaires à l'application de la loi ?*<br>• *Quelles approches de coordination des politiques sont les plus prometteuses (p. ex. lorsque plusieurs instances – police, justice, santé, inspection du travail – sont impliquées dans le système de mise en œuvre de la loi) ?* |

Le troisième domaine de recherche porte sur la ***gouvernance de la production et de la vente du cannabis***. L'ensemble de la chaîne d'approvisionnement et de valeur doit être prise en compte afin d'assurer une protection efficace de la santé publique. Des recherches sont menées sur les normes de production et la réglementation de la culture personnelle, mais là encore, les résultats sur les effets attendus ne sont pas probants. La production doit être transformée et distribuée d'manière sûre et responsable et de façon à promouvoir l'équité économique et sociale. Diverses réglementations existent en matière d'étiquetage, de conditionnement et de publicité. Les principales interrogations à ce sujet sont :

| *Gouvernance de la production et de la vente du cannabis* | |
|---|---|
| **Structure de contrôle** | <u>Questions centrales</u><br>• *Quels sont les avantages des différents systèmes de licence possibles concernant la culture, la transformation et la vente du cannabis ?*<br>• *Comment protéger la future législation sur le cannabis et la recherche contre l'influence du secteur privé à but lucratif ?*<br><br><u>Aspects socio-économiques</u><br>• *Quel est le potentiel économique d'un marché du cannabis totalement ou partiellement légalisé pour les producteurs et les vendeurs suisses par rapport à un statu quo ?*<br>• *Que peuvent apprendre les législateurs de l'expérience de l'alcool et du tabac pour limiter les manipulations de l'industrie sur la vente du cannabis légal ?*<br>• *Quelles solutions réglementaires sont efficaces pour atténuer les risques de commercialisation ?*<br>• *Quels sont les avantages et les inconvénients d'une interdiction totale du marché commercial ?*<br>• *Quels sont les effets de divers systèmes de réglementation en termes sociaux et d'équité ?* |

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| | • *Comment les aspects d'équité peuvent-ils être promus dès le départ ? Quels programmes devraient être développés pour améliorer la situation de groupes désavantagés ?*<br>• *Quels sont les coûts sociaux globaux de différentes approches de réglementation (prohibition, décriminalisation, légalisation) ?*<br><br><u>Mise en œuvre des politiques</u><br>• *Quelles compétences réglementaires doivent être attribuées aux différents niveaux de l'État (national, cantonal, communal) ? Quels sont les risques et les avantages potentiels d'un modèle de gouvernance sur plusieurs niveaux ?*<br>• *Comment améliorer la coordination entre cantons pour faciliter l'harmonisation de la mise en œuvre ?*<br>• *Comment les réglementations relatives au cannabis médical et non médical peuvent-elles être dissociées sans s'entraver, voire en s'étayant les unes les autres ?*<br>• *De quelle manière les partenariats entre l'État et les acteurs privés (groupes professionnels, producteurs, etc.) devraient-ils être établis afin d'appliquer les politiques adoptées ?* |
| **Production** | • *Comment élaborer une réglementation concernant la production de cannabis garantissant la sécurité et la qualité des produits ainsi que la sécurité des systèmes de production ?*<br>• *Quels sont les effets de la légalisation du cannabis sur les cultures personnelles et à domicile de cannabis ? Comment une supervision gouvernementale est-elle possible dans un tel modèle ?*<br>• *Quelles sont les différentes options possibles en matière de test des produits, d'évaluation et de supervision du processus de production ?* |
| **Transformation et distribution** | • *Quelles dispositions doivent être prises pour la transformation et la distribution du cannabis ?*<br>• *Quel type de restrictions doit être mis en œuvre concernant la promotion ?*<br>• *Quelle réglementation appliquer au conditionnement et à l'étiquetage afin de correspondre aux habitudes locales de consommation et d'assurer la promotion des objectifs de santé publique pour que celle-ci soit plus efficace ?* |
| **Vente au détail** | • *Quelle réglementation appliquer au système de vente au détail pour répondre aux préoccupations en matière de santé publique et de sécurité ?*<br>• *Quelle configuration de vente est la plus à même de pousser les consommateurs à abandonner leurs fournisseurs habituels (illégaux) pour promouvoir les effets positifs d'une nouvelle réglementation ?*<br>• *Quelles restrictions sur les ventes et l'achat sont efficaces du point de vue de la santé publique (restrictions d'accès et de disponibilité, rationnement, achats limités à une certaine quantité, etc.) ?*<br>• *Quels sont les avantages potentiels et les risques liés aux différents modèles de vente (p. ex. vente en boutique ou en ligne) ? Est-il préférable d'avoir des points de vente de cannabis étatiques plutôt que commerciaux du point de vue de la santé publique ?* |
| **Consommation** | • *Quelles sont les preuves de l'efficacité de l'interdiction de la consommation dans les lieux publics en matière de santé publique ?*<br>• *Quels sont les avantages et les inconvénients des différentes options de restriction concernant le lieu de consommation du point de vue de la santé publique et de la sécurité ?*<br>• *Comment réglementer et surveiller les lieux de consommation autorisés ?* |
| **Prix / taxation** | • *Comment le prix et la taxation influencent-ils les habitudes de consommation (changement d'habitudes, priorités locales, etc.) ?* |

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| | • *Comment établir une structure tarifaire et fiscale permettant de faire concurrence au marché illégal mais dont les prix soient suffisamment élevés pour limiter l'accès des jeunes au cannabis et la consommation ?*<br>• *Comment les revenus du cannabis peuvent-ils être redistribués afin de promouvoir l'équité et la santé publique, ainsi que la recherche ?* |

## Priorités dans le contexte suisse

En Suisse, le débat sur le cannabis se concentre principalement sur les approches réglementaires qui permettraient de réduire les risques et de maximiser les bénéfices sur la santé publique. Les avis divergent à ce sujet, les uns estimant que le cannabis est un produit à éviter en toutes circonstances et prônant par conséquent une interdiction totale, les autres avançant qu'il s'agit d'une réalité sociale et approuvant l'examen d'autres options. L'article dit d'« expérimentation » autorisant les essais pilotes a finalement été approuvé par la majorité du Parlement afin d'étudier les problématiques centrales de la réglementation du cannabis de manière ouverte et non biaisée. Les discussions menées en Suisse et les conclusions de la recherche internationale permettent d'établir quatre grandes priorités relatives à la réglementation future du cannabis, qui constituent la partie « conséquences » du modèle logique développé.

La première d'entre elles est la ***promotion de la santé individuelle et publique*** et poursuit les objectifs fixés par la loi sur les stupéfiants (LStup) et l'ordonnance correspondante (OEPStup). Dans ce domaine, la recherche s'intéresse avant tout à la prévention des troubles addictifs et de la consommation à risques, à l'aide et au traitement des personnes à risques, à l'atténuation des nuisances sanitaires et sociales ainsi qu'à la réduction des retombées négatives sur la société. Les preuves solides sur les répercussions sont relativement rares car la légalisation dans les autres pays est récente, la transposition au système suisse est difficile et la mesure des effets sur la santé individuelle et publique reste complexe.

La ***promotion de l'ordre public et la réduction de la criminalité*** constituent la deuxième priorité. Bien qu'il ne s'agisse pas de la principale raison de la réflexion entamée sur la législation actuelle en matière de cannabis en Suisse, le fait de remplacer le marché illégal est un objectif régulièrement évoqué. Dans ce contexte, il convient de prêter une attention particulière aux trois secteurs prioritaires que sont la réduction des activités criminelles, l'amélioration de la sécurité et de l'ordre public ainsi que le maintien de l'ordre, l'organisation de la police et l'application de la loi. Il semble très important ici que les études soient menées sur le long terme et ne se concentrent pas uniquement sur la période qui suit la mise en œuvre d'une mesure, mais également sur le statu quo afin de pouvoir effectuer des comparaisons intéressantes.

La troisième priorité est la ***protection des mineurs***. En effet, les études internationales ne fournissent pas de données claires sur les conséquences d'une consommation précoce et les adolescents suisses sont de grands consommateurs. De plus, le sujet est particulièrement sensible dans les débats politiques. L'approche suisse actuelle pour protéger efficacement les mineurs repose sur trois piliers : la protection légale de la jeunesse, la promotion de la jeunesse et l'aide à la jeunesse. Les recherches futures sur les conséquences des différentes approches réglementaires dans ces trois domaines sont essentielles.
La quatrième et dernière priorité est le ***renforcement de la prospérité et de l'équité***. La légalisation du cannabis fournit une nouvelle base d'imposition et offre la possibilité de créer une nouvelle industrie. L'expérience des autres pays montre que les acteurs à but lucratif de ce domaine gagnent rapidement en influence et cherchent à l'exercer pour que le cadre légal soit plus avantageux pour eux. Il semble donc judicieux de se pencher sur des solutions intermédiaires plutôt que sur une approche commerciale, malgré la tradition libérale de la Suisse. Par ailleurs, les questions concernant la justice sociale, l'égalité et le contrôle de la chaîne d'approvisionnement sont particulièrement importantes.

## Essais pilotes sur le cannabis

Le cadre légal pour les futurs essais pilotes sur le cannabis est fixé par l'ordonnance sur les essais pilotes au sens de la loi sur les stupéfiants (OEPStup) de 2021. Les essais pilotes doivent fournir des renseignements concernant les effets sur : la santé physique et psychique des consommateurs et leur performance, le comportement lié à la consommation, les aspects socio-économiques, le marché de la drogue sur un territoire spécifique, la protection de la jeunesse et la sécurité et l'ordre publics (art. 2, al. 2, de l'OEPStup). Ils doivent par ailleurs être limités géographiquement et dans le temps, et des critères concernant les substances à utiliser et les participants ont été établis. Il incombe à l'OFSP de délivrer les autorisations et d'assurer un suivi et un contrôle des projets. Dans les grandes villes suisses, plusieurs équipes scientifiques réfléchissent à des modèles de recherche pour les futurs essais pilotes. La coordination de la recherche est prise en compte avec le développement d'un questionnaire commun pour les participants. Les équipes de recherche ont l'intention de travailler avec différents types de points de distribution (cannabis social clubs, pharmacies, kiosques, magasins de e-cigarettes) notamment à des fins de comparaison. Les points de distribution jouent un rôle plus ou moins actif en fonction des projets. Jusqu'à présent, les équipes de recherche travaillent principalement sur des questions de santé et se concentrent sur la consommation. Toutefois, les considérations socio-économiques et les répercussions possibles sur la santé publique à proximité des points de distribution sont aussi abordées par certaines équipes. L'étude des prix, des effets de différents produits et de la polyconsommation est envisagée.

En fonction de ces aspects, du modèle logique et des réflexions actuelles des équipes de recherche, nous avons déterminé des sujets de recherche possibles et des questions pour les futurs essais pilotes. L'expérience récente des autres pays montrant que ce canal de distribution gagne en importance, la vente en ligne doit être envisagée dans la mesure de ce qu'il est légalement possible de faire, et ses effets doivent être examinés. Afin d'étudier le marché de la drogue dans une zone géographique donnée ou bien ses répercussions sur la sécurité et l'ordre publics, des villes similaires pourraient être comparées et des méthodes statistiques pourraient aider à évaluer les liens de causalité. Il convient en outre de prendre en compte la polyconsommation dans les enquêtes ou les entretiens menés avec les participants. Sélectionner des participants habitant avec des mineurs ou interviewer des mineurs directement pourrait permettre de collecter des données immédiates sur la protection de ces derniers. Parmi les autres sujets méritant également être d'étudiés figurent les répercussions des différents formats et des variations entre produits sur la santé des participants, les caractéristiques de produit qui attirent le plus les participants ou encore les dispositions réglementaires susceptibles d'encourager une consommation moins risquée.

## Recherches complémentaires et autres recherches nécessaires

Certaines questions peuvent difficilement être traitées dans le cadre d'essais pilotes en raison des prescriptions légales et se prêtent donc davantage à des recherches complémentaires. Actuellement, l'OFSP a attribué quatre mandats de recherche à cet effet et cofinance un cinquième projet avec des partenaires. Une étude de *Sotomo* s'intéresse à l'acceptation générale des mesures réglementaires et à l'attitude des électeurs à l'égard du cannabis. *En collaboration avec Rütter Soceco, l'Université de Genève* enquête sur les effets économiques du cannabis pour le compte de plusieurs institutions. L'accent est ici mis sur les conséquences économiques de différents modèles réglementaires, les éventuelles recettes fiscales et le potentiel économique d'un marché du cannabis légal pour les producteurs et vendeurs suisses. Une étude récemment publiée par l'*IRM de Bâle* avait pour objectif d'analyser la littérature sur la limitation des taux de THC sur la route et d'imaginer des scénarios possibles pour adapter la législation routière. La *ZHAW* s'est intéressée au problème de la culture et de la production du cannabis et aux normes de produit qui permettraient de protéger au mieux les consommateurs. *Addiction Suisse* a quant à elle été mandatée pour réaliser une analyse comparative des évaluations des différentes

politiques réglementaires en vigueur à l'étranger, bon nombre d'entre elles n'étant en effet pas suffisamment étudiées.

Des recherches complémentaires sont par ailleurs nécessaires dans le domaine du traitement et de la distribution concernant les effets des différents produits et de leur conditionnement sur le choix du consommateur. Les recherches réalisées en dehors du cadre des essais pilotes n'ont pas à satisfaire aux critères fixés par l'OEPStup, et devraient donc fournir des connaissances supplémentaires. S'agissant des recettes et des taxes, des questions se posent concernant leur redistribution ainsi que sur la tarification la plus judicieuse dans le cadre d'une législation visant la promotion de la santé publique. En matière d'ordre public et de sécurité, les auteurs du présent rapport estiment nécessaire de collecter davantage d'informations sur le fonctionnement du marché illicite. Ce sujet peut toutefois difficilement être traité par les essais pilotes. Des recherches concernant les réglementations potentiellement applicables à différents types de produits doivent également être menées. Dans le contexte de la protection de la jeunesse, les études quasi-expérimentales sur différentes formes de produits, les messages de prévention, les canaux de communication et l'intérêt que les jeunes leur portent constituent des approches méthodologiques prometteuses. Par ailleurs, les campagnes de prévention effectuées au sein des familles ou des communautés s'étant avérées efficaces, il convient de les examiner de plus près et de déterminer comment les renforcer du point de vue structurel. Il faut en outre mener une réflexion sur la forme que doivent prendre le contrôle par l'État ainsi que les organismes et dispositifs de contrôle pour être pertinents. Il s'agit non seulement de définir qui pourra octroyer les licences, mais aussi s'il est intéressant d'interdire aux acteurs du domaine d'exercer des activités à la fois dans la production, l'approvisionnement et la vente. Des recherches transversales sur le statu quo sont également nécessaires pour évaluer les effets des différentes législations qui seront adoptées. Au vu des différences souvent observées entre les politiques officielles et leur mise en œuvre, l'application des politiques doit faire l'objet de recherches. Les avantages et les inconvénients des diverses options réglementaires existantes entre décriminalisation et légalisation doivent aussi faire l'objet de recherches comparatives. Il en va de même pour les répercussions des mesures structurelles susceptibles d'encourager des choix comportementaux éclairés et de guider les consommateurs vers des manières de consommer moins problématiques.

## Coordination et financement de la recherche

Trois modèles idéaux-typiques de financement et de coordination de la recherche sont à distinguer. Le *modèle de financement politique* sert directement les intérêts du gouvernement et vise à répondre à des questions pratiques ainsi qu'à développer des solutions qu'il sera possible de mettre en œuvre. Le *modèle de financement axé sur la science* prend appui sur les questions de recherche qui sont fondamentales pour une discipline. Souvent détaché du débat politique, il comporte un risque de dispersion des efforts de recherche. Le *modèle de financement stratégique* s'intéresse à toutes les pistes de recherche dans les domaines concernés et traite aussi bien les questions mises en avant par le monde académique que celles liées à la politique.

Bien que le modèle de financement politique ne soit légalement pas applicable dans le cadre des essais pilotes sur le cannabis, l'expérience en matière de coordination et de financement de la recherche concernant la prescription d'héroïne peut permettre d'identifier des facteurs de réussite. Les cantons, les communes ainsi que des organisations privées étaient responsables de la mise en œuvre des essais et c'est le gouvernement fédéral qui finançait l'évaluation scientifique du projet. Un groupe de chercheurs avait été mandaté pour définir et appliquer un plan général de recherche. Les essais n'étaient pas approuvés par l'OFSP jusqu'à ce que les acteurs ne s'engagent à utiliser un questionnaire commun normalisé avec les participants pour collecter leurs données.

Concernant les essais pilotes sur le cannabis, le scénario d'un financement de la recherche décentralisé et auto-coordonné semble actuellement se dessiner. Le gouvernement fédéral évalue et approuve les projets et collecte les résultats, mais ne joue pas un rôle actif ni dans la production ni dans le financement de la recherche. Il existe plusieurs bailleurs de fonds en Suisse susceptibles de soutenir un tel *modèle de financement axé sur la science*. Le Fonds national suisse (FNS) est certainement la principale institution indépendante d'encouragement de la recherche. Outre la possibilité de déposer des demandes individuelles pour des projets spécifiques, le FNS connaît les Pôles de recherche nationaux (PRN) s'adressant aux scientifiques établis en Suisse qui souhaitent réaliser des projets de recherche sur le long terme, le programme Sinergia pour la recherche interdisciplinaire collaborative et divers instruments pour encourager les coopérations dans la recherche internationale. Plusieurs fondations indépendantes offrent également un soutien financier aux projets scientifiques. D'autres fonds existent dans le secteur du tabac et de l'alcool et promeuvent la recherche en matière de consommation de substances et d'addiction. Les conflits d'intérêts potentiels sont un problème connu dans ce domaine. L'indépendance par rapport à d'éventuels intérêts industriels et la prévention des conflits d'intérêts sont donc des questions centrales pour le financement des futures recherches sur le cannabis et peuvent être renforcées par certains principes clés. Ainsi, la coordination de la recherche portée par les chercheurs pourrait s'appuyer sur les principes de la science ouverte, ce qui garantirait entre autres la transparence du processus de recherche et l'accessibilité des données au public.

Au vu des conditions actuelles, la coordination pourrait réalistement être renforcée avec la définition d'une taille unitaire standard pour le cannabis, le développement d'un questionnaire de base commun pour les participants et la création d'une plateforme commune pour la centralisation et l'échange des données où les données brutes et les résultats seront rendus accessibles. La coordination exige une communauté de recherche entretenant des liens forts. Une étude sur plusieurs sites ou centres ne semble aujourd'hui pas être une option réaliste, mais un soutien plus important de l'OFSP incluant un financement de la coordination de la recherche pourrait être utile. Les Programmes nationaux de recherche (PNR) du FNS constituent une solution évidente pour s'orienter vers un modèle de financement plus stratégique. En effet, ils promeuvent explicitement la recherche dans un domaine que le gouvernement estime pertinent. Si cela est jugé opportun, un PNR pourrait être étendu à des problèmes liés à la consommation d'autres substances et à l'addiction.

## Recommandations

*Développement d'une méthodologie de recherche transversale*

1. La recherche internationale utilise parfois des questionnaires de base normalisés qui peuvent être complétés par des modules additionnels pour tenir compte du contexte spécifique du pays ou de la région. Par analogie, nous recommandons de développer un questionnaire de base pour la Suisse avec des modules supplémentaires qui permettront de mieux prendre en considération les spécificités du marché de la drogue dans un espace donné, par exemple.

2. Bien que certains essais pilotes semblent utiliser des questions et des notions similaires, il n'existe pour l'instant pas de questionnaire commun s'appuyant sur des notions clés. Nous recommandons que l'OFSP contribue à établir une méthodologie de recherche transversale en soutenant les initiatives de questionnaire commun ou de liste de questions essentielles des chercheurs.

3. Nous recommandons de définir une taille unitaire standard pour le cannabis et de développer un questionnaire de base commun pour les participants ainsi qu'une plateforme commune pour la centralisation et l'échange des données afin de se rapprocher d'une méthodologie de recherche transversale.

*Coordination des projets de recherche (essais pilotes)*

4. Il faut s'attendre à ce que le public et les médias prêtent une attention toute particulière aux essais pilotes et à la recherche sur le cannabis. Nous recommandons par conséquent que les chercheurs se coordonnent pour développer une stratégie de communication politique et publique solide.

5. Outre la prohibition et le modèle commercial standard qui sont des options communément évoquées, il existe un grand nombre de solutions intermédiaires de réglementation du cannabis rarement mises en œuvre. Nous recommandons donc que davantage de recherches soient réalisées en Suisse sur ces solutions intermédiaires peu étudiées au niveau international. Il semble y avoir là un fort potentiel de réduction des coûts sanitaires et sociaux.

6. Dans le cadre des essais pilotes, l'OFSP exerce différentes fonctions et est avant tout une instance d'approbation et de contrôle. Les conflits d'intérêts sont inévitables et nous recommandons donc de clarifier le rôle de l'OFSP pour mieux soutenir les essais pilotes à l'avenir.

*Financement de la recherche*

7. La recherche semble pouvoir s'appuyer sur un modèle de financement stratégique ou bien axé sur la science par le biais des subventions du FNS, mais le cadre légal exclut un financement direct par le gouvernement fédéral. Pour augmenter les chances de voir les demandes de financement aboutir, nous recommandons une plus grande coopération avec des experts étrangers afin d'identifier les lacunes de la recherche et de garantir la pertinence du projet au niveau international.

8. Avec leurs structures organisationnelles et financières, les fonds de prévention du tabagisme et de l'alcoolisme sont de potentiels bailleurs de fonds intéressants pour les acteurs souhaitant mener des recherches pour établir une législation fondée sur des faits.

9. Pour garantir l'indépendance et la crédibilité de la recherche et empêcher l'industrie d'exercer une influence abusive, les scientifiques doivent veiller à adhérer aux principes directeurs visant à éviter les conflits d'intérêts dans le financement de la recherche sur le cannabis (p. ex. pas d'influence de l'industrie sur les décisions de financement, liberté de publier les résultats de recherche).

10. Les fondations indépendantes pourraient jouer un rôle crucial dans le financement des essais pilotes si leurs objectifs se recoupent. La coordination dans ce domaine (p. ex. avec une structure de conseil centrale pour le financement de la recherche sur le cannabis) pourrait aider les différentes équipes scientifiques dans leurs recherches de financements auprès des fondations ou des autres bailleurs.

# Sintesi

## Oggetto e mandato

In Svizzera la canapa è illegale dal 1951. Di recente la decriminalizzazione della canapa è stata discussa nell'Assemblea federale. Gli sviluppi in altri Paesi hanno ricevuto un'attenzione accresciuta e hanno stimolato ulteriori discussioni su possibili riforme. Gli approcci normativi in altri Paesi variano molto, ma le evidenze scientifiche solide sugli effetti degli strumenti sono ancora scarse. Alcune città svizzere hanno lanciato iniziative per condurre sperimentazioni pilota con la canapa al fine di trovare alternative basate su prove scientifiche allo stato attuale, segnato da varie incongruenze. Una richiesta iniziale presentata dalla città di Berna all'Ufficio federale della sanità pubblica (UFSP) fu rifiutata nel 2017 a causa della mancanza di una base legale, ma contribuì alla stesura di un «articolo sperimentale» per le sperimentazioni pilota con la canapa negli anni seguenti. L'ordinanza sulle sperimentazioni pilota secondo la legge federale sugli stupefacenti (OSPStup) consente a cantoni, comuni, università e altre organizzazioni di condurre sperimentazioni pilota per acquisire conoscenze scientifiche su approcci alternativi al disciplinamento dell'uso ricreativo della canapa. L'ordinanza elenca le varie condizioni che devono essere soddisfatte affinché una richiesta possa essere autorizzata dall'UFSP. In vista di future sperimentazioni pilota, l'UFSP ha incaricato il professor Daniel Kübler e il suo team del Dipartimento di scienze politiche dell'Università di Zurigo (IPZ) di sviluppare un'agenda di ricerca focalizzata su nuovi approcci giuridici alla regolamentazione della canapa. L'obiettivo di tale agenda è di servire da linea guida per la produzione di evidenze scientifiche legate non solo alle sperimentazioni pilota con la canapa, ma anche a ulteriori questioni relative alla regolamentazione della canapa, e di riflettere sul coordinamento e il finanziamento della ricerca.

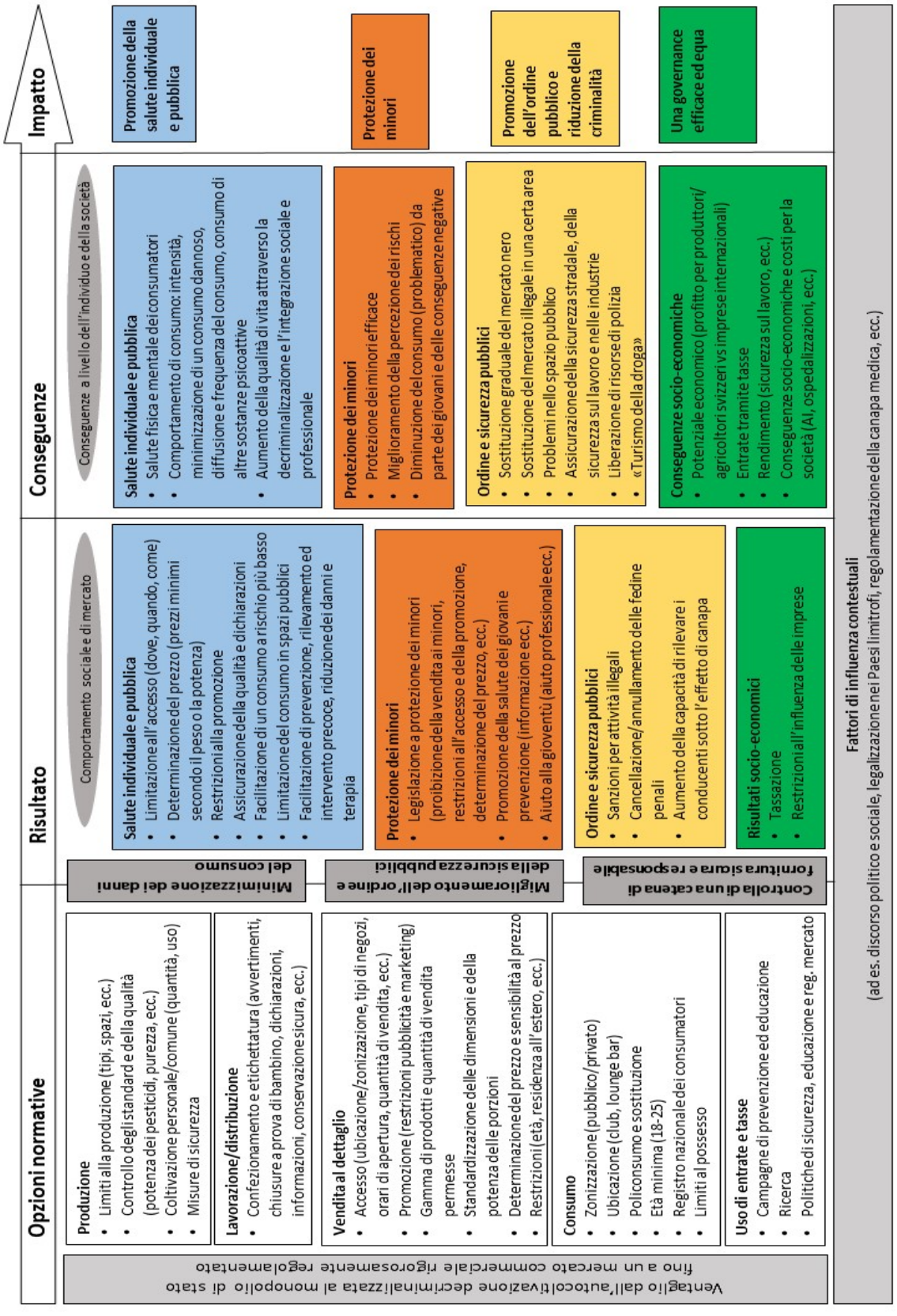
## Metodologia

Per elaborare la presente relazione sono state usate quattro principali fonti di informazioni. In primo luogo è stata considerata la ricerca e la letteratura in lingua inglese sulle conseguenze della legalizzazione della canapa ad uso ricreativo. Una ricerca sistematica della letteratura nel "Web of Science" per la meta-analisi e la revisione metodica ha consentito di identificare 36 pubblicazioni, le quali sono state esaminate. Inoltre sono state incluse ulteriori fonti di recente pubblicazione relative alla regolamentazione della canapa in altri Paesi o alla canapa e alla politica in materia di droghe in Svizzera. In secondo luogo è stato istituito un comitato consultivo con una base relativamente ampia. Gli autori si sono consultati frequentemente con i membri del comitato, che hanno fornito un feedback sulle versioni precedenti della presente relazione. In terzo luogo è stata instaurata una collaborazione con il Canadian Center of Substance Use and Addiction (CCSA), da cui è conseguito il seminario internazionale intitolato «Cannabis research in times of legalization: What's on the agenda» (Ricerca sulla canapa in tempi di legalizzazione: cosa c'è in agenda), tenutosi a febbraio del 2021. In quarto luogo vi è stato un confronto con diversi esperti in Svizzera e le prime stesure della presente relazione sono state presentate alla Commissione federale per le questioni relative alle dipendenze e alla prevenzione delle malattie non trasmissibili (CFDNT) e ai membri interessati della rete Swiss School of Public Health (SSPH+).

## Domanda principale e campi di ricerca

Dal punto di vista teorico è concepibile un ampio ventaglio di modelli di regolamentazione della canapa, da un divieto assoluto a un libero mercato commerciale. Si presume che i costi sociali e di salute siano particolarmente elevati ai due estremi di tale ventaglio, e andrebbe cercata un'alternativa nel mezzo. Per lavorare in direzione di opzioni normative situate nel mezzo di questi due estremi, la seguente domanda principale funge da guida: *in quali condizioni normative possono essere minimizzati in modo efficace i costi sociali e di salute del consumo di canapa?* Le evidenze validate da altre giurisdizioni sono scarse e le difficoltà di confronto includono la natura specifica di tali evidenze, che sono legate a un determinato contesto, nonché la mancanza di dati relativi allo stato attuale. Sono quindi necessarie maggiori

*Modello logico generale del disciplinamento della canapa*



conoscenze su ***come possono essere minimizzati in modo efficace i costi sociali e di salute del consumo di canapa***. Ciò è particolarmente rilevante in Svizzera, dove il dibattito politico è fortemente concentrato sulla salute pubblica. In base alla letteratura attuale sono state identificate tre aree di ricerca principali, parzialmente sovrapposte, fondamentali per un'efficace regolamentazione della canapa orientata alla salute pubblica, le quali sono riassunte nel seguente modello logico generale del disciplinamento della canapa (cf pagina precedente).

Il primo campo di ricerca può essere denominato ***minimizzazione dei danni per la salute e la società***. In questo campo è in particolare la paura di conseguenze negative per la salute della legalizzazione della canapa ad aver ispirato varie pubblicazioni scientifiche. Le ricerche attuali giungono a una varietà di conclusioni diverse e sembra esservi la necessità di ulteriori studi. Le evidenze esistenti riguardano principalmente gli sforzi di prevenzione e non tanto la riduzione dei danni. Le domande di ricerca importanti ancora aperte in questo campo includono le seguenti.

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| **Riduzione dei danni per la salute** | <u>Salute fisica e mentale</u><br>• *In che modo i diversi modelli di regolamentazione influiscono sulla salute fisica e mentale dei consumatori?*<br>• *Come possono essere diminuiti i costi complessivi e la domanda dell'uso di canapa?*<br>• *Come possono essere rilevate le persone con un consumo problematico e a rischio attraverso un accesso regolamentato alla canapa?*<br>• *Quali scelte normative potrebbero presumibilmente avere effetti positivi sulla salute per un'ampia parte dei consumatori?*<br><br><u>Comportamento di consumo</u><br>• *Quali sono gli effetti di diverse opzioni normative sul comportamento di consumo (intensità, diffusione, frequenza)?*<br>• *Come possono essere concepite le misure normative (ad es. orari di apertura, ubicazione) al fine di a) rafforzare gli sforzi di prevenzione e b) facilitare un consumo a rischio più basso minimizzando nel contempo il consumo dannoso?*<br>• *Quali sono gli effetti dei diversi modelli di commercio/vendita?*<br><br><u>Qualità della vita e riduzione dei danni</u><br>• *In che modo le misure normative possono sostenere le strategie dei consumatori per un uso non problematico della canapa e per l'integrazione di tale uso nella loro vita quotidiana?*<br>• *Quali misure strutturali incoraggiano una scelta comportamentale informata e aumentano le competenze dei consumatori relative all'uso? Quali disposizioni in rapporto alle «linee guida per un consumo sicuro» sono appropriate?*<br>• *In che misura i provvedimenti per la riduzione dei danni sono implementati efficacemente nei diversi quadri normativi?*<br>• *In che modo un mercato della canapa regolamentato può aumentare le competenze nel campo della salute dei consumatori di canapa e prevenire un uso problematico (informazione attraverso etichette, consulenza di vendita e campagne pubbliche)?*<br>• *Come può essere migliorata la qualità di vita e l'integrazione sociale delle persone dipendenti attraverso un accesso alla canapa disciplinato dalla legge?* |
| **Prevenzione e intervento efficaci** | • *Quali misure normative rafforzano gli sforzi di prevenzione senza spingere i consumatori verso il mercato illegale?*<br>• *Quali misure normative promuovono il rilevamento e l'intervento precoci in rapporto ai consumatori vulnerabili (ad es. misure amministrative per i consumatori giovani)?*<br>• *Come possono essere integrati nei quadri normativi i fattori relativi al sesso e al genere?* |

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| **Protezione dei minori** | • *Quali misure normative sono importanti per proteggere i minori in modo efficace (incluse le misure di protezione strutturali) e di conseguenza impedire un inizio precoce del consumo?*<br>• *Come dovrebbero essere concepite le campagne di prevenzione per ridurre il consumo (in particolare ad alto rischio) tra i giovani e possibilmente facilitare un consumo a rischio più basso per i giovani adulti (ad es. livelli di potenza graduati per diversi gruppi di età)?*<br>• *Quali sono gli effetti della legalizzazione sull'atteggiamento dei giovani verso la canapa, la loro percezione dei rischi associati al consumo di canapa e la probabilità di iniziare a usarla (precocemente)? L'accesso legale favorisce una normalizzazione del consumo di canapa?*<br>• *Quali misure normative possono essere prese per rilevare e sostenere i consumatori minorenni a rischio?* |
| **Sicurezza dei consumatori** | • *Quali standard legali e quali controlli di qualità dovrebbero essere introdotti (ad es. pesticidi, sostanze contaminanti)?*<br>• *Come può essere monitorata la catena di fornitura in modo tale da minimizzare i rischi per la salute e i danni alla società?*<br>• *L'accesso ai vari prodotti della canapa può essere regolamentato in modo graduale secondo la potenziale dannosità dei prodotti e/o i loro diversi gruppi target?* |
| **Policonsumo di altre sostanze** | • *Dovrebbero essere vietati la vendita e l'acquisto simultanei di canapa e alcol?*<br>• *Come si può ridurre l'uso simultaneo di canapa e tabacco e prevenire una transizione dalla canapa al tabacco?*<br>• *Come dovrebbero essere concepite le misure normative al fine di consentire il monitoraggio della produzione di canapa e della sua qualità e di assicurarne la tracciabilità?*<br>• *In che modo un accesso regolamentato alla canapa influisce sul policonsumo di altre sostanze?* |

Il secondo campo di ricerca è l'***aumento dell'ordine e della sicurezza pubblici.*** In questo ambito i ricercatori concentrano l'attenzione sulla misura in cui la legalizzazione della canapa ha un'influenza sulle risorse di polizia o su quali opzioni normative hanno un impatto sul crimine e la violenza legati alla droga. Un tema studiato spesso sono le conseguenze sulla sicurezza stradale e del lavoro. Come nel campo precedente, i risultati di ricerca sono inconcludenti. Sono necessari studi su larga scala e nel lungo termine, oltre a informazioni sufficienti sullo stato attuale per poter valutare la questione fondamentale dell'effetto delle regolamentazioni sul mercato illegale. Le principali domande di ricerca aperte sono le seguenti.

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| **Attività criminali** | • *Qual è l'influenza di diverse opzioni normative sul mercato illegale?*<br>• *In che misura un mercato legale è in grado di eliminare il mercato illegale? Quali condizioni consentono di raggiungere meglio tale obiettivo?*<br>• *Quali sono gli effetti della decriminalizzazione, rispettivamente della legalizzazione, sulle attività criminali legate alla canapa?* |
| **Ordine e sicurezza pubblici** | • *Quali misure dovrebbero essere prese per garantire la sicurezza stradale e la sicurezza sul posto di lavoro (definizione dei limiti di THC, multe, informazione, campagne, controlli, ecc.)?*<br>• *Quali misure possono essere prese per prevenire disturbi legati alla canapa negli spazi pubblici (ad es. numero e ubicazione dei punti vendita, orari di apertura)?*<br>• *In che modo l'adeguamento della regolamentazione del commercio può condurre a una riduzione della guida sotto l'effetto di canapa e dei rischi di sicurezza sul lavoro?*<br>• *Quali sono gli effetti di diversi modelli normativi sul turismo legato alle droghe? Quali sono le strategie più efficaci per minimizzare le conseguenze negative del turismo legato alle droghe?* |

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| **Sorveglianza, organizzazione della polizia e applicazione della legge** | • *Quali approcci sono efficaci per prevenire e rilevare la guida sotto l'effetto di canapa (ad es. sanzioni, esecuzione, test e prevenzione)?*<br>• *Come influiscono i diversi quadri normativi sulle risorse del sistema di applicazione della legge?*<br>• *Quali approcci al coordinamento dell'attuazione sono i più promettenti (ad es. dove diverse agenzie sono coinvolte nel sistema di attuazione delle politiche, come le autorità di polizia, giustizia, salute, l'ispettorato del lavoro, ecc.)* |

Il terzo campo di ricerca concerne *la **gestione di una catena di fornitura sicura e responsabile***. Deve essere considerata l'intera catena di fornitura e di valore aggiunto al fine di conseguire una protezione della salute pubblica efficace. In questo campo si sta facendo ricerca sugli standard di produzione e sulla regolamentazione della coltivazione in proprio, ma anche qui gli effetti prevedibili non sono assolutamente concludenti. La materia prodotta deve essere lavorata e distribuita in modo sicuro e responsabile. Vi sono diversi disciplinamenti relativi all'etichettatura dei prodotti, le confezioni e la pubblicità. In questo campo, le domande di ricerca fondamentali senza risposta sono le seguenti.

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| **Struttura di controllo** | <u>Domande generali</u><br>• *Quali sono i vantaggi di diversi approcci all'autorizzazione riguardanti la coltivazione, la lavorazione e la vendita della canapa?*<br>• *In che modo la legislazione e la ricerca future in materia di canapa possono essere protette dall'influenza delle imprese?*<br><br><u>Aspetti economici</u><br>• *Qual è il potenziale economico di un mercato della canapa interamente o parzialmente legalizzato per i produttori e i rivenditori svizzeri rispetto allo stato attuale?*<br>• *Che cosa possono imparare le autorità di controllo dall'esperienza fatta con l'alcol e il tabacco per minimizzare la manipolazione del commercio legale di canapa da parte dell'industria?*<br>• *Quali opzioni normative sono efficaci per ridurre il rischio della commercializzazione?*<br>• *Quali sono i vantaggi e gli svantaggi di una proibizione assoluta di un mercato commerciale?*<br>• *Quali conseguenze hanno i diversi approcci di regolamentazione sui risultati di equità e giustizia sociale?* |

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| | • *Come si può promuovere l'equità sociale fin dall'inizio? Che tipo di programmi dovrebbero essere sviluppati per sostenere l'inclusione di gruppi meno avvantaggiati e sproporzionatamente colpiti nell'industria?*<br>• *Quali sono i costi globali per la società causati dalle diverse scelte di regolamentazione (proibizione, depenalizzazione, legalizzazione)?*<br><u>Implementazione delle politiche</u><br>• *Quali competenze normative devono essere situate a quale livello di autorità (nazionale, cantonale, municipale)? Quali sono i rischi e le opportunità di un approccio di governance a più livelli?*<br>• *Come può essere migliorato il coordinamento tra cantoni al fine di facilitare l'armonizzazione dell'implementazione?*<br>• *Come possono essere separati i disciplinamenti dell'uso di canapa medica e non medica in modo che siano di sostegno e non di ostacolo l'uno all'altro?*<br>• *Come dovrebbero essere instaurati partenariati tra attori statali e privati nell'attuazione delle politiche (gruppi professionali, produttori, ecc.)?* |
| **Produzione** | • *Come dovrebbe essere concepita la regolamentazione della produzione di canapa per garantire la sicurezza e la qualità del prodotto e assicurare la sicurezza dei sistemi di produzione?*<br>• *Quali sono gli effetti della legalizzazione della coltivazione in casa e in proprio di canapa? In che modo è praticabile la supervisione statale in un tale modello?*<br>• *Quali sono le opzioni normative per testare i prodotti e valutare e supervisionare il processo di produzione?* |
| **Lavorazione e distribuzione** | • *Quali misure andrebbero prese per la lavorazione e la distribuzione di canapa?*<br>• *Che tipo di limitazioni andrebbero implementate per quanto concerne la promozione?*<br>• *Come dovrebbero essere regolamentati il confezionamento e l'etichettatura al fine di accordarsi con gli schemi di consumo locali e promuovere gli obiettivi di salute pubblica, così da consentire una promozione più efficiente degli obiettivi di salute pubblica?* |
| **Commercio** | • *Come dovrebbe essere disciplinato un sistema di commercio in modo da soddisfare gli interessi della salute e della sicurezza pubbliche?*<br>• *Quale impostazione della vendita farà più probabilmente abbandonare ai consumatori le loro consuete fonti (illegali) di rifornimento promuovendo gli effetti positivi di una nuova regolamentazione?*<br>• *Quali restrizioni normative sulla vendita e l'acquisto sono efficaci dal punto di vista della salute pubblica (restrizioni di accesso e disponibilità, razionamento, acquisto solo fino a una determinata quantità, ecc.)?*<br>• *Quali sono le opportunità e i rischi di diversi modelli di commercio/vendita (ad es. negozi vs online)? I punti vendita a gestione statale sono preferibili ai punti vendita commerciali in termini di salute pubblica?* |
| **Consumo** | • *Quali sono le evidenze relative all'efficacia, in termini di salute pubblica, del divieto di consumo di canapa negli spazi pubblici?*<br>• *Quali sono i vantaggi e gli svantaggi di diverse restrizioni sul luogo del consumo dalla prospettiva della salute e della sicurezza pubbliche?*<br>• *Come dovrebbero essere disciplinati e monitorati i luoghi in cui il consumo è ammesso?* |
| **Determinazione del prezzo / tassazione** | • *In che modo la determinazione del prezzo e la tassazione influiscono sugli schemi di consumo (cambiamenti negli schemi di consumo, priorità locali, ecc.)?*<br>• *Come può essere istituita una struttura equilibrata di determinazione del prezzo e di tassazione che assicuri la competitività rispetto al mercato illegale e nel contempo* |

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| | *garantisca un prezzo sufficientemente alto da limitare l'accesso dei giovani e ridurre il consumo?* |

## Priorizzazione nel contesto svizzero

Il dibattito sulla canapa in Svizzera si concentra principalmente sugli approcci normativi adatti a minimizzare i rischi e massimizzare i benefici per la salute pubblica. All'interno del dibattito politico vi sono due punti di vista: il primo evidenzia che il consumo di canapa andrebbe evitato del tutto, e quindi sottoposto a un divieto assoluto, mentre il secondo accoglie con favore la valutazione di opzioni alternative, poiché il consumo di canapa è visto come una realtà sociale. Il cosiddetto «articolo sperimentale» per le sperimentazioni pilota alla fine è stato approvato dalla maggioranza del parlamento, con lo scopo di esaminare le questioni centrali della regolamentazione della canapa in modo obiettivo e aperto. Dal dibattito in Svizzera e dalle evidenze della ricerca internazionale si possono evincere quattro priorità generali per il futuro disciplinamento della canapa. Queste quattro priorità costituiscono anche le dimensioni di impatto nel modello logico.

La prima priorità, ***la promozione della salute individuale e pubblica***, si attiene agli obiettivi prefissati dalla legge federale sugli stupefacenti e sulle sostanze psicotrope (Lstup) e dalla relativa ordinanza (OSPStup). Le questioni prioritarie per la ricerca in questo campo riguardano la prevenzione delle dipendenze e del consumo ad alto rischio, la messa a disposizione dell'aiuto e del trattamento necessari alle persone a rischio, la riduzione dei danni per la salute e la società nonché la riduzione delle ripercussioni negative sulla società. Le evidenze solide su questa dimensione di impatto sono relativamente scarse poiché la legalizzazione in altri Paesi è recente, la trasposizione al contesto svizzero è difficile e la misurazione degli effetti sulla salute individuale e pubblica resta ardua.

La seconda priorità è ***la promozione dell'ordine pubblico e la riduzione della criminalità***. Benché non sia la motivazione primaria per riconsiderare l'attuale politica in materia di canapa in Svizzera, rimuovere l'attuale mercato illegale è un obiettivo ricorrente. In questo contesto, va prestata particolare attenzione a tre ambiti prioritari: la riduzione delle attività criminali, l'aumento dell'ordine e della sicurezza pubblici, nonché la sorveglianza, l'organizzazione della polizia e l'applicazione della legge. Parrebbe particolarmente importante che gli studi siano focalizzati sul lungo termine ed esplorino non solo il periodo che segue un intervento, ma anche lo stato attuale, al fine di poter fare paragoni significativi.

La terza priorità è ***la protezione dei minori***, poiché gli studi internazionali non forniscono prove chiare sulle conseguenze del consumo da parte di giovani e il consumo di canapa tra gli adolescenti svizzeri è particolarmente elevato. Inoltre il tema è al centro di discussioni accese nel dibattito politico. In Svizzera l'approccio attuale per assicurare una protezione efficace dei minori si basa sui tre pilastri seguenti: legislazione a protezione dei minori; promozione della salute dei giovani e prevenzione; aiuto alla gioventù. La futura ricerca sulle conseguenze di diversi approcci alla regolamentazione della canapa per queste tre aree tematiche è importante.

La quarta e ultima priorità è ***l'aumento della prosperità e dell'equità.*** La legalizzazione dell'accesso alla canapa crea una nuova entrata fiscale e un'opportunità per una nuova industria, e l'esperienza fatta in altri Paesi dimostra che attori orientati al profitto diventano rapidamente influenti e vogliono esercitare un ascendente sul quadro normativo a proprio favore. Per questa ragione, sembrerebbe appropriato esplorare possibili alternative a un approccio commerciale, nonostante la tradizione liberale della Svizzera. Inoltre, hanno una particolare priorità le questioni della giustizia sociale e dell'equità, nonché del monitoraggio della catena di fornitura.

## Sperimentazioni pilota con canapa

La base legale per le future sperimentazioni pilota con la canapa è definita nell'OSPStup del 2021. Le sperimentazioni pilota devono fornire conoscenze in merito ai seguenti temi: la salute fisica e psichica dei consumatori nonché le prestazioni degli stessi; il comportamento legato al consumo; gli aspetti socioeconomici; il mercato della droga in un determinato territorio; la protezione della gioventù; l'ordine e la sicurezza pubblici (art. 2 cap. 2 OSPStup). Inoltre, le sperimentazioni pilota devono essere limitate sotto il profilo territoriale e temporale e vi sono indicazioni specifiche in merito alle sostanze da dispensare e ai partecipanti. L'UFSP è responsabile per l'autorizzazione ed esegue le funzioni di monitoraggio e controllo. Diversi team di ricerca nelle maggiori città svizzere stanno attualmente riflettendo approfonditamente sui design di ricerca per future sperimentazioni pilota. Vi sono considerazioni in merito al coordinamento della ricerca nel contesto dello sviluppo di un questionario comune per i partecipanti. I team di ricerca intendono lavorare con diversi tipi di dispensari (circoli sociali dedicati alla canapa, farmacie, chioschi, negozi di sigarette elettroniche) e in parte mostrarne le differenze. Vi è una certa variazione in relazione a quanto attivo dovrebbe essere il ruolo dei dispensari durante le sperimentazioni pilota. Le considerazioni dei team di ricerca finora riguardano prevalentemente gli aspetti della salute e sono incentrate sul consumo. Tuttavia, alcuni team affrontano anche gli aspetti socioeconomici e i possibili effetti sulla sicurezza pubblica nelle vicinanze dei dispensari. Inoltre esiste anche l'intenzione di investigare la determinazione del prezzo, gli effetti di diversi prodotti e il policonsumo di altre sostanze.

Sulla base di considerazioni legate al modello logico e alle attuali riflessioni dei team di ricerca, sono stati elaborati possibili argomenti e domande di ricerca per future sperimentazioni pilota. Andrebbe considerata la vendita attraverso canali online, nel limite di quanto legalmente possibile, e studiato il suo effetto, poiché le esperienze fatte di recente in altri Paesi dimostrano che questo canale di vendita è in crescita. Al fine di studiare il mercato della droga in una determinata area o l'impatto sull'ordine e la sicurezza pubblici, città simili potrebbero essere paragonate e metodi statistici potrebbero aiutare a stimare gli effetti causali. Domande sul policonsumo di altre sostanze dovrebbero essere considerate nelle interviste o nei sondaggi rivolti ai partecipanti. Un metodo per ottenere evidenze immediate sulla protezione dei minori potrebbe essere quello di selezionare i partecipanti allo studio che convivono con minori e intervistare anch'essi direttamente. Ulteriori questioni da esaminare includono: in quale misura diversi formati e varianti dei prodotti hanno un impatto sulla salute dei partecipanti agli studi, quali caratteristiche dei prodotti sono particolarmente attrattive per i partecipanti e quali misure normative possono promuovere un consumo a rischio più basso.

## Ricerca supplementare e necessità di ricerche aggiuntive

Alcune questioni importanti potranno difficilmente essere indagate nelle sperimentazioni pilota a causa dei requisiti legali e sono quindi più idonee per la ricerca supplementare. Attualmente, l'UFSP ha conferito quattro mandati a questo scopo e sta sostenendo finanziariamente un quinto progetto insieme ad altri partner. Uno studio di *Sotomo* sta analizzando l'accettazione generale delle misure normative e l'atteggiamento della popolazione votante nei confronti della canapa. Per conto di diverse istituzioni, l'*Università di Ginevra* sta esaminando *in collaborazione con Rütter Soceco* gli effetti economici della canapa. Al centro di questa ricerca vi sono questioni relative alle conseguenze economiche di diversi modelli di regolamentazione, al gettito fiscale potenziale e al potenziale economico di un mercato della canapa legale per produttori e rivenditori svizzeri. Lo studio recentemente pubblicato dall'*Istituto di medicina legale (IRM) di Basilea* mirava ad analizzare la letteratura sui limiti di THC nel traffico stradale e a sviluppare possibili scenari per l'adattamento delle norme stradali. La *Scuola universitaria di scienze applicate di Zurigo (ZHAW)* ha affrontato le questioni della coltivazione, della produzione e degli standard di prodotto che meglio proteggono i consumatori. Il mandato conferito a *Dipendenze Svizzera* riguarda un'analisi comparativa delle valutazioni delle diverse politiche di regolamentazione in altri Paesi, poiché molte di queste politiche attualmente sono ancora valutate in misura insufficiente.

Nel campo della lavorazione e della distribuzione sono necessarie ricerche aggiuntive sugli effetti delle diverse caratteristiche dei prodotti e delle confezioni sulle scelte dei consumatori. In questo contesto, la ricerca al di fuori del quadro delle sperimentazioni pilota può deviare dalle specifiche richieste per legge secondo la OSPStup. Ciò potrebbe permettere di acquisire ulteriori conoscenze. In rapporto al tema delle entrate e della tassazione, sorgono domande sulla distribuzione delle possibili entrate e su quale struttura di prezzo sia più sensata per una regolamentazione volta a promuovere la salute pubblica. Nell'area tematica dell'ordine e della sicurezza pubblici è stata identificata la necessità di ottenere conoscenze aggiuntive sul funzionamento del mercato illegale, che difficilmente potrà essere affrontato in modo esaustivo attraverso le sperimentazioni pilota. Inoltre sono necessarie ricerche aggiuntive sulle possibili regolamentazioni di diversi tipi di prodotto. Nel contesto della protezione dei giovani, si ravvisa un promettente approccio metodologico nei quasi-esperimenti relativi alle diverse forme di prodotto, ai messaggi di prevenzione, ai canali di comunicazione e la loro attrattività per i giovani. In aggiunta, le campagne di prevenzione basate sulle comunità o sulle famiglie, campagne che hanno dimostrato la loro efficacia, dovrebbero essere esaminate con maggiore attenzione in modo da determinare come possono essere rafforzate strutturalmente. È importante anche studiare come dovrebbero essere concepiti un controllo statale, enti di controllo e misure di controllo appropriati. La questione non è solo determinare chi dovrebbe concedere l'autorizzazione, ma anche se il divieto di un'attività simultanea nell'ambito della produzione, della fornitura e del commercio sia concludente. Oltre a ciò è necessaria la ricerca interdisciplinare sullo stato attuale al fine di poter valutare gli effetti delle diverse regolamentazioni che potrebbero essere adottate in futuro. Inoltre, vi è il bisogno di fare ricerca nell'area dell'implementazione delle politiche, poiché vi sono spesso discrepanze tra le politiche formali e la loro implementazione. È necessaria anche la ricerca comparativa sui vantaggi e gli svantaggi delle varie opzioni normative situabili tra la decriminalizzazione e la legalizzazione e sulla misura in cui provvedimenti strutturali possono incoraggiare scelte comportamentali informate e guidare i consumatori verso modalità d'uso meno problematiche.

## Coordinamento e finanziamento della ricerca

Si possono distinguere tre modelli ideali di finanziamento e coordinamento della ricerca, che si differenziano in particolare nella misura in cui il contenuto della ricerca viene diretto. Il *metodo di finanziamento politico* è al servizio degli interessi del governo e mira a rispondere a questioni pratiche e a sviluppare soluzioni applicabili. Il *metodo di finanziamento basato sulla scienza* parte dalle domande di ricerca centrali per le varie discipline, è spesso distaccato dal dibattito legato alla legislazione e corre il rischio di sfociare in tentativi di ricerca incoerenti. Il *metodo di finanziamento strategico*, quale terzo modello ideale, persegue tutte le vie promettenti della ricerca negli ambiti rilevanti, affrontando non solo le questioni identificate dal mondo accademico, ma anche quelle relative alla prospettiva politica.
Anche se la base legale esclude un metodo di finanziamento politico per le sperimentazioni pilota con la canapa, uno sguardo alle esperienze fatte con il coordinamento e il finanziamento in rapporto alla prescrizione medica di eroina aiuta a identificare i fattori di successo. In questo caso cantoni, comuni e organizzazioni private erano responsabili per l'implementazione delle sperimentazioni e il governo federale forniva le risorse finanziarie per la valutazione scientifica. Un gruppo di ricercatori fu incaricato di definire e implementare un piano di ricerca globale. Le sperimentazioni non furono approvate dall'UFSP finché non ci si impegnò a raccogliere dati utilizzando un questionario standardizzato comune distribuito ai partecipanti degli studi.

Per le sperimentazioni pilota con la canapa, attualmente lo scenario del finanziamento della ricerca decentralizzato e dell'auto-coordinamento si sta delineando come una soluzione praticabile più realistica. Il governo federale valuta e approva progetti di ricerca e raccoglie i risultati, ma non svolge un ruolo attivo nella produzione o nel finanziamento della ricerca. In Svizzera vi sono diversi donatori possibili per finanziare un tale *metodo di finanziamento basato sulla scienza*. Il Fondo nazionale svizzero

per la ricerca scientifica (FNS) è certamente la più importante organizzazione indipendente per il finanziamento della ricerca. Oltre alla possibilità di presentare domande individuali per singoli progetti, vi sono i Poli di ricerca nazionali (PRN) per ricercatori affermati con programmi di ricerca a lungo termine, il programma Sinergia per la ricerca interdisciplinare da parte di diversi team di ricerca nonché vari strumenti per rendere possibile la collaborazione internazionale nella ricerca. Anche diverse fondazioni indipendenti forniscono un sostegno finanziario ai progetti scientifici. Inoltre, esistono fondi indipendenti nel settore del tabacco e dell'alcol che a loro volta sostengono la ricerca nel campo dell'uso di sostanze e delle dipendenze. Il potenziale conflitto di interessi è un problema noto in quest'area. L'indipendenza da possibili interessi industriali e la prevenzione dei conflitti d'interesse sono pertanto centrali per il futuro finanziamento della ricerca sulla canapa e possono essere rafforzate seguendo alcuni principi. È anche ipotizzabile un orientamento del coordinamento della ricerca ad opera dei ricercatori stessi verso i principi dell'Open Science, il che garantirebbe la trasparenza del processo di ricerca e la disponibilità pubblica dei dati, tra gli altri vantaggi.

Alle condizioni date, è considerata realistica la possibilità di un maggiore coordinamento nella determinazione della dimensione di un'unità standard di canapa, nello sviluppo di un questionario di base comune per i partecipanti e nella creazione di una piattaforma comune per raggruppare e condividere i dati, sulla quale sono resi accessibili i dati e i risultati preliminari. Il coordinamento dipende fortemente da una comunità di ricerca strettamente connessa e al momento non si ritiene che uno studio multi-sito o multi-centro sia un'opzione realistica, ma un maggiore sostegno da parte dell'UFSP, che includa il finanziamento per il coordinamento della ricerca, potrebbe essere utile. Lo strumento più ovvio per un metodo di finanziamento strategico sarebbero i Programmi nazionali di ricerca (PNR) del FNS. I PNR sono un *metodo di finanziamento strategico* proprio in quanto promuovono esplicitamente la ricerca su una problematica specifica che il governo considera rilevante. Se opportuno, il focus di un tale PNR potrebbe essere esteso a questioni riguardanti l'uso di altre sostanze e le dipendenze.

## Raccomandazioni

*Sviluppo di una metodologia di ricerca condivisa*

1. Nella ricerca internazionale a volte viene usato un questionario di base standardizzato al quale possono essere aggiunti moduli facoltativi per prendere in esame le condizioni specifiche del Paese o della regione in questione. Analogamente, si raccomanda di sviluppare un questionario di base per la Svizzera con moduli supplementari che per esempio prendono maggiormente in considerazione la situazione del mercato della droga in una determinata area geografica.

2. Anche se alcune sperimentazioni pilota sembrano usare domande e argomenti simili, una serie comune di domande con argomenti di base attualmente non esiste. Si raccomanda che l'UFSP contribuisca a una metodologia di ricerca condivisa sostenendo gli sforzi dei ricercatori volti a stilare un questionario comune o alcune domande di base concordate.

3. Si raccomanda la determinazione della dimensione di un'unità standard di canapa, un questionario di base comune per i partecipanti agli studi e una piattaforma comune per raggruppare e condividere i dati come passi verso una metodologia di ricerca condivisa.

*Coordinamento dei progetti di ricerca (sperimentazioni pilota)*

4. Le sperimentazioni pilota con canapa saranno con ogni probabilità esposte a un intenso scrutinio da parte dell'opinione pubblica e dei media. Si raccomanda quindi che i ricercatori si coordinino per sviluppare una valida strategia di comunicazione pubblica e politica.

5. Oltre alle alternative discusse normalmente, ovvero la proibizione e il modello commerciale standard, in teoria esistono numerose vie di mezzo per la regolamentazione della canapa, che sono raramente messe in pratica. Si raccomanda pertanto che in Svizzera si svolga più ricerca su queste possibili vie di mezzo, che sono ancora poco indagate a livello internazionale e sembrano avere il potenziale per ridurre significativamente i costi di salute e sociali.

6. Nel quadro delle sperimentazioni pilota, l'UFSP svolge varie funzioni ed è innanzitutto un organo di autorizzazione e di controllo. I conflitti di interesse sono inevitabili e si raccomanda perciò di chiarire il ruolo dell'UFSP al fine di sostenere meglio le future sperimentazioni pilota.

*Finanziamento della ricerca*

7. Un metodo di finanziamento basato sulla scienza o un metodo di finanziamento strategico tramite contributi del FNS potrebbero essere opzioni praticabili per il finanziamento della ricerca, mentre la base legale preclude il finanziamento diretto da parte del governo federale. Al fine di aumentare la possibilità delle domande di finanziamento, si raccomanda una maggiore cooperazione con esperti internazionali per identificare le lacune importanti nella ricerca e assicurare una rilevanza internazionale.

8. I Fondi per la prevenzione dell'alcolismo e del tabagismo, con la loro impostazione organizzativa e finanziaria, rappresentano interessanti veicoli di finanziamento ai quali dovrebbero guardare i portatori di interessi che seguono la ricerca empirica a scopi legislativi.

9. Per assicurare l'indipendenza della ricerca e la sua credibilità e per prevenire un'influenza inappropriata da parte dell'industria sulle attività di ricerca, i ricercatori dovrebbero aderire ad alcuni principi guida per evitare i conflitti di interesse nel finanziamento della ricerca in materia di canapa (ad es. nessuna influenza dell'industria sulle decisioni di finanziamento, libertà di pubblicare i risultati delle ricerche).

10. Le fondazioni indipendenti potrebbero svolgere un ruolo fondamentale nel finanziamento degli studi pilota, a condizione che essi rispondano agli scopi delle fondazioni. Il coordinamento in questo ambito (ad es. un ufficio consultivo centrale per il finanziamento della ricerca sulla canapa) potrebbe sostenere i vari team di ricerca che cercano contributi finanziari da parte di fondazioni e altri attori.

# 1 Introduction

## 1.1 Background: Cannabis policy in Switzerland

Cannabis is by far the most commonly used illegal drug worldwide (UNODC, United Nations Office on Drug and Crime 2018) as well as in Switzerland (Obsan 2019). In alignment with the international drug control conventions, most countries implemented national prohibition laws concerning the production, supply and use of cannabis (Rehm and Fischer 2015). Cannabis has been illegal in Switzerland since 1951. Today, Switzerland's drug policy is still influenced by the so-called "four-pillars-model", which was established as a consequence of the drug-related crisis in the 1980s and 1990s. This period was marked by the spread of intravenous heroin use and the closely linked transmissions of infectious diseases, most notably HIV/AIDS. In addition to *prevention*, *treatment* and *repression*, *harm reduction* became an essential pillar of the Swiss approach. In the late 1990s, two popular initiatives were rejected, one of which was aimed towards a more restrictive drug policy ("Youth without drugs"), the other towards the legalization of all drugs ("Droleg"). Taking into account these developments and the increased use of cannabis among young people as well as the negative impacts of repression, the Federal Council proposed a revision of the Federal Law on Drugs to Parliament in 2001, which was rejected. In a later revision, the parliament decided to institutionalize harm reduction into law, without relaxing the repressive approach to any drugs. In 2008, this decision was confirmed in a referendum, whilst the voters opposed a popular initiative aiming to legalize cannabis.

However, because of the increasing numbers of denunciations for cannabis use, a decriminalization of cannabis was discussed in parliament (Wenger et al. 2014). Since October 2013 and based on Article 19*b* of the Law on Narcotics, possessing up to 10 grams of the substance for consumption purposes is not considered a criminal offense anymore. Nevertheless, consumption is still illegal and a fine of 100 CHF can be charged ("Ordnungsbusse"). The administrative fines have created confusion and contributed to new problems (Zobel et al. 2019). In addition, in 2008 the legal regulation was specified with a limit of one percent tetrahydrocannabinol (THC) (BetmVV-EDI SR 812.121.11). This led to the emergence of a new "legal" cannabis market since 2016, selling products with low doses of THC but high levels of cannabidiol (CBD). Even though the initially fast-growing trend around the new CBD market has levelled off again, it has put forward new commercial actors and fueled new discussions. Furthermore, the current situation of requiring a special permit by the Federal Office of Public Health (FOPH) for the medical use of cannabis has been criticized (Brunner and Kübler 2019). There is a broad political consensus that access to medical cannabis should be facilitated, and revisions have been passed by the parliament accordingly.

Alternative cannabis regulation models to prohibition are discussed and have been introduced in different countries, thereby challenging the international treaties on drug enforcement. Many countries now allow not only the use of medicinal cannabis, some US-states (since 2012), Uruguay (2013), as well as Canada (2018) have also legalized cannabis for recreational use (Hall et al. 2019). Consequently, those developments have fueled the discussions about cannabis regulation in many other countries. Regulatory choices for non-medical cannabis use vary widely, and there are still many open questions with respect to the impact of cannabis legalization not only for individual users, but also for communities and the wider society. There is thus a need for scientific evidence on the existing policy options and their consequences. This need is not only felt internationally, but also in Switzerland, where the debate about how and what to learn from other experiences started in the last decade. Whereas some political actors have welcomed efforts to rethink the current policy and have pointed out the positive aspects of cannabis regulation, such as decriminalization of consumers, harm reduction, quality control of the substances as well as the collection of taxes, opponents have raised concerns regarding the protection of minors and the maintenance of public order. Consequently, several local initiatives, in particular in urban areas, started

to develop plans for local pilot trials for cannabis regulation, criticizing the limits and inconsistencies of the current situation. After the first project request by the City of Bern was rejected by the Federal Office of Public Health (FOPH) in 2017 due to lack of legal basis, political action by the parliament was sparked and a public consultation was launched. This process lead to the establishment of a so-called "*experimentation article*" in the Federal Act on Narcotics and Psychotropic Substances (NarcA), allowing pilot trials with cannabis during a period of ten years after adoption of the article (Art. 8a) . The term "pilot" refers to the experimental legislation rather than the form of the trials.

The regulation of cannabis in Switzerland would mean a change of paradigm. The recent amendment of the NarcA entails the possibility for third parties, e.g. cantons, municipalities or universities, to conduct pilot trials with cannabis in order to gather more evidence-based knowledge about the possibilities and limitations of a regularized cannabis market. In order to build a solid foundation for future decision-making, and eventually a reorientation of the Swiss cannabis policy, these projects need to be coordinated accordingly (BBI 2019: 2556). The current legal framework states that the pilot trials should focus on "non-medical" use of cannabis, and generate findings on the consequences of different measures, instruments and approaches in the field of cannabis. Further specifics were defined in the Federal Council's ordinance on the pilot trials regarding the requirements (local and temporal restrictions, target groups and participation, cultivation standards, product quality and safety, etc.), the procedure (submission of requests, authorization, etc.) as well as the implementation. The pilot trials should build on prior international experience with the regulation of cannabis and should speak to the objectives formulated in the National Strategy on Addiction 2017-2024 [1] (BBI 2019: 2534). The implementation of this strategy includes the priorities of early detection, needs-oriented treatment, counselling and harm reduction as well as coordination.

### 1.2 Mandate and aim

In parallel to the preparation of the legislative framework for the pilot trials for non-medical cannabis use, the FOPH started the development of a research agenda for the generation of scientific evidence, during the ten-year period defined by the experimentation article (2021-2031), needed for decision-making on a potential re-orientation of cannabis legislation after the experimental period. On the 14th of July 2020, the FOPH sent out invitations to a variety of scientists, and finally mandated Prof. Daniel Kübler and his team from the Department of Political Science at the University of Zurich (IPZ) to formulate a research agenda suitable to guide the elaboration of relevant scientific evidence on the topic of cannabis regulation. Coordination of the contents of the different pilot trials as well as the research methodology is considered necessary in order to obtain a clear picture of the possibilities and constraints of a regulated access to cannabis. As agreed with the FOPH, the specific aims[2] of this mandate were to elaborate a report that

1. identifies the relevant research questions on the topic of cannabis regulation;
2. suggests an order of priority for these questions according to their relevance for policy-making;
3. clarifies which of these questions can be studied in the context of future pilot trials for non-medical cannabis use;
4. lists those questions that need to be studied through additional research;
5. formulates recommendations regarding measures of overall research integration, coordination and funding.

[1] An overview document is available online under https://www.bag.admin.ch/bag/en/home/strategie-und-politik/nationale-gesundheitsstrategien/strategie-sucht.html

[2] Cf. Bundesamt für Gesundheit (2020), *Pflichtenheft: Forschungskonzept Cannbisregulierung und Pilotversuche mit Cannabis*, Bern: Bundesamt für Gesundheit; D. Kübler (2020) *Forschungskonzept Cannbisregulierung und Pilotversuche mit Cannabius. Offerte zur Ausschreibung des Bundesamtes für Gesundheit vom 14.7.2020*, Zürich: Institut für Politikwissenschaft.

In view of the upcoming pilot trials in various Swiss cities, the aim of this report is to provide a systematic basis that can be used by the federal government or the FOPH for the coordination of the upcoming pilot trials, as well as the awarding of contracts within the framework of departmental research or any further research projects in the field of cannabis. Coordination of the contents of the different pilot trials as well as the research methodology is considered desirable in order to obtain a clear picture of the possibilities and constraints of a regulated access to cannabis. The interested parties (cities and cantons) already signaled that they would welcome coordinative support by the federal government. The federal government plans to coordinate the various research projects within the framework of the pilot phase in order to ensure that an appropriate scientific basis for decision-making is created for a possible reorientation of cannabis policy to be submitted to parliament. Coordinating the content and methodology of the research efforts is one aspect of this goal.

### 1.3 Structure of this report

The structure of this report follows our mandate. The next chapter shortly explains our methodological approach, which is based mainly on a structured search for relevant reviews in order to gain an understanding of existing research and relevant debates as well as on discussions with national and international experts. In the third chapter, the research agenda will be discussed by setting the framework and defining the overarching question. Based on the international literature the most important research fields to the particular topic of cannabis regulation will be determined, which will be summarized in a logic model. Chapter four is dedicated to a prioritization of relevant research questions in the Swiss context. In chapter five we discuss the legal framework of the pilot trials, present ongoing reflections by several research teams and point to questions to potentially be incorporated in future pilot trials. In chapter six, research questions for supplementary investigations are presented. Chapter seven focuses on questions regarding the coordination of the different research endeavors and funding. Lastly, we conclude by summarizing the main points and formulating recommendations.

# 2 Method

For the development of the research agenda, we draw on four major sources of information.

First, in order to gain an understanding of existing research and relevant debates to the particular topic of cannabis regulation, we take into account the most recent research and literature on the consequences of cannabis legalization in other countries as well as specific literature on cannabis policy in Switzerland. Because of the fast growing field, we rely primarily on meta-analyses such as systematic literature reviews, other reviews, and policy papers that address the implications of cannabis legalization from a public health perspective. More precisely, we searched the database "Web of Science" using search terms including 'cannabis' as well as 'legalization' or 'regulation' and 'public health' (and synonyms). The search was limited to reviews published in the last 5 years (i.e. 2017-2021) to cover current research questions, and was restricted to English language publications. A total of 156 records were identified. After screening of the titles we removed 104 records not directly relevant for the purpose of this report (e.g. papers on medical cannabis etc.). While reading the abstract we also excluded papers examining only the medical consequences of cannabis consumption with no reference to policy choices. We finally included 36 reviews.

Additionally, we consulted further studies such as the systematic literature review by Darnell (2020), produced on behalf of the French Monitoring Centre for Drugs and Drug Addiction (OFDT), as well as the recently published anthology on international experiences related to the legalization of cannabis (Decorte et al. 2020). Furthermore, we considered policy papers that highlight the design considerations and policy decisions surrounding the question of cannabis regulation. For instance, we consulted the final report of the Canadian Task Force on Cannabis Legalization and Regulation that recommended to take a public health approach (Canada. Task Force on Cannabis Legalization and Regulation 2016) as well as reports by the RAND corporation (Caulkins et al. 2015) and by the Canadian Centre on Substance Abuse (2015) summarizing the "lessons learned" from experience in US states. In addition, we take into account papers summarizing learnings and recommendations for cannabis regulation from alcohol and tobacco control (Haden & Emerson 2014; Ghosh et al. 2016). Lastly, we draw on recent publications on cannabis in Switzerland to identify the most relevant research questions for the Swiss context (Zobel et al. 2019; Herzig et al. 2019; Pütz 2016; Philbert et al. 2019; Brunner and Kübler 2019).

Second, in order to avoid blind spots and missing important issues from only reviewing the literature, an *advisory board* was set up (see Table 1). Switzerland-based experts from various disciplinary backgrounds were invited in collaboration with the FOPH. More precisely, the advisory board included experts involved in the planning of cannabis pilot trials, as well as experts working in other functions related to cannabis policy in Switzerland. The advisory board convened in a virtual meeting in December 2020, which not only allowed an exchange of information on the current state of the pilot trials and their research agenda, but also to discuss research topics and questions that are of overarching interest and significance to researchers in Switzerland (see Appendix). Finally, all members of the advisory group were invited to comment on the first draft of this report in early March and the revised version in April 2021.

**Table 1: Members of the Advisory Board**

| Title | Name | Institution |
|---|---|---|
| Prof. lic. phil. | Irene Abderhalden | FHNW School of Social Work, Institute for Social Work and Health |
| Prof. Dr. | Reto Auer | University of Bern, Institute of Primary Health Care (BIHAM) |
| Prof. Dr. med. | Barbara Broers | University of Geneva, Swiss Society for Cannabis in Medicine |
| Prof. Dr. | Sandro Cattacin | University of Geneva, Department of Sociology |
| Dr. | Florian Elliker | University of St.Gallen, Seminar of Sociology |
| Prof. Dr. | Jean- François Etter | University of Geneva, Institute of Global Health, Division of Cancer Epidemiology and Prevention |
| | Julia Joos | City of Bern |
| Dr. | Céline Mavrot | University of Bern, KPM Center for Public Management |
| Dr. | Carlos Nordt | Psychiatric University Clinic Zurich (PUK) |
| | Andres Oehler | City of Zurich |
| | Niklaus Reichle | University of St.Gallen, Seminar of Sociology |
| Prof. Dr. | Michael Schaub | University of Zurich, Swiss Research Institute of Public Health and Addiction |
| Dr. | Christian Schneider | Independent expert |
| Prof. Dr. | Marc Walter | University Psychiatric Clinics (UPK), Center for Addictive Disorders, |
| Prof. Dr. | Gerhard Wiesbeck | University Psychiatric Clinics (UPK), Center for Addictive Disorders |
| | Frank Zobel | Addiction Switzerland |
| Prof. Dr. | Daniele Zullino | Geneva University Hospitals, Department of Psychiatry, Addiction Division |

Third, facilitated by the FOPH, we established a collaboration with the *Canadian Centre on Substance Use and Addiction* (CCSA) in order to gain insight on the state of the art in the international scientific debate on cannabis regulation. With Rebecca Jesseman from CCSA we co-convened a workshop with international experts in the field of cannabis research. Entitled "Cannabis research in times of legalization: What's on the agenda?", the workshop was held online on February 8, 2021 with the aim of compiling findings, identifying research gaps, and establishing an international cannabis research network (see Appendix). The workshop also led to the elaboration of a paper with the same title, which will be published in the CCSA series later this year.

Finally, we had additional meetings and exchanges with individual experts in Switzerland. Supplementary interviews were conducted with those responsible for the planned pilot trials. In addition, we were able to participate in meetings of the interurban working group on cannabis on December 17, 2020, and to exchange information with Swiss cannabis experts in the context of meetings with the advisory board. Lastly, a first draft of this report was presented to and discussed with members of the Federal Commission for Questions on Addiction and Prevention of Noncommunicable Diseases (*EKSN*) at its meeting on March 4, 2021, as well as to interested members of the Swiss School of Public Health (SSPH+) network on March 19, 2021, in order to validate the content and the key messages of the report.

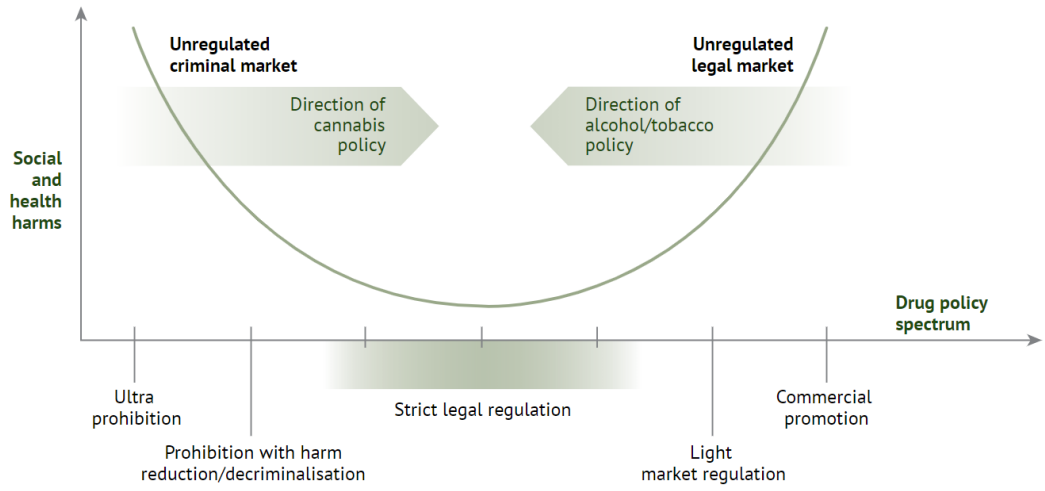
We thank the members of our advisory board, as well as all other experts for their numerous and valuable comments and remarks we received during the exchanges and processes outlined above. While we have revised the final version of this report in light of all these comments, the final responsibility for the content of this report is ours.

# 3 Research Agenda

## 3.1 Overarching question for a new approach to regulate non-medical use of cannabis

Currently, different models of cannabis regulation exist ranging from strict prohibition to a commercial market with little regulation, each with its advantages and drawbacks (Fischer et al. 2020b). The available legal and political models of regulating the production, supply and use of cannabis can be described as a spectrum with differing levels of government intervention (see Figure 1). Under **prohibition**, cannabis is illegal, all activities from production to consumption are forbidden, and repressive measures are in place. Criminal law and enforcement by the police and justice system are essential within most cannabis policies. In many countries, the impact of being convicted for cannabis possession or consumption has ramifications such as the stigma of arrest. Therefore, the prohibitive model has been criticized to fail **harm reduction** goals. Furthermore, "experts have long argued that enforcement has not succeeded in deterring cannabis use, while the health and social harms that result from such a regulatory approach are disproportionately high relative to the health risks of cannabis use, especially given that cannabis use is common in industrialized countries" (Lake et al. 2019). In order to reduce the risk of individuals of having a criminal record, **decriminalization** refers to the removal of criminal sanctions for some offences, such as simple possession for personal use, and replacing them with sanctions such as fines, as currently it is the status-quo in Switzerland. Therefore, the illegality of cannabis remains in place, and criminal organizations continue to play a leading role. The Dutch model tolerates the sale and possession of cannabis in small amounts, without allowing for its production, and Spain's model is characterized by non-profit cannabis social clubs.

**Figure 1: Spectrum of policy options available**




**Source: Canada. Task Force on Cannabis Legalization and Regulation 2016: 12.**[3]

In contrast, within a legal regulation framework, profits should be kept out of the hands of criminals, eventually displacing the illegal market. A **strictly regulated market** aims at keeping control of the whole supply chain, and thus at regulating all aspects of cannabis production and the availability of products (Decorte 2018). This was the main objective in Uruguay, which was grappling with the problem of gangs and drug-related violence. The first country to introduce a nationally regulated

[3] First published in: Iles, S. & Murkin, G. (2016) How To Regulate Cannabis: A Practical Guide. 2nd ed. Transform Drug Policy Foundation, page 28–29. Available from: www.tdpf.org.uk/resources/publications/how-regulate-cannabis-practical-guide. Adapted from an original concept by John Marks. [Marks, J. The Paradox of Prohibition in "Controlled Availability: Wisdom or Disaster?"; National Drug and Alcohol Research Centre, University of New South Wales; p. 7–10. 1990.]

market for non-medical use of cannabis offers consumers three methods of accessing cannabis: home growing, cannabis social clubs, and buying from pharmacies. In Canada the idea was important that public interest is best served if the regulatory regime is designed to maximize health and social welfare by facilitating lower-risk consumption and reducing illegal market activity. Finally, the various US-states in which marijuana is legal are an example of a liberal **commercial approach**.

According to the theoretical model displayed in Figure 1, at both extremes of the spectrum – prohibition with a thriving illicit market as well as a free market – social and health harms are the highest. Whereas unconditional commercial promotion is expected to increase consumption, an ultra-prohibition approach on the opposite causes harms for users by uncontrolled products and stigmatization. Therefore, the model theorizes that the costs on the prohibitive side can be decreased if consumption is decriminalized, and on the legal side if the market is strictly regulated. Thereby, the vast evidence from related policy areas, in particular tobacco and alcohol, offer inspiration and guidance for policy-makers to re-evaluate their cannabis policies (Decorte 2018). In some countries, tobacco and alcohol have traditionally been heavily marketed but are now increasingly restricted according to public health principles. At the same time, other countries moved from strictly controlling these popular, yet potentially harmful and addictive substances to making them widely available. Consequently, at the bottom of the curve lies the point where public policy goals are most likely to be achieved (Canada. Task Force on Cannabis Legalization and Regulation 2016: 11). Seeking a balance according to public health principles would allow to control and manage the individual as well as societal use of cannabis, which is not possible under the current prohibition. Furthermore, concerns over insecurity and public safety can be tackled by depriving organized crime groups of control of the cannabis market. Therefore, the supply- as well as the demand-side of cannabis use could be controlled. While clear in theory, in practice the following overarching question arises:

***Under which regulatory conditions can the social and health costs of cannabis consumption be effectively minimized?***

Even though scientific evidence has accumulated over the past years, we still lack comprehensive research in many areas and evidence is often incomplete or inconclusive (Fischer et al. 2020b). On the one hand, it is difficult to transfer experiences from one national context to another because of the different social, cultural and political circumstances, on the other, solid knowledge about the point of departure is often missing although it would be necessary in order to contrast different approaches. The main objective of research endeavors thus is to generate more knowledge about how different regulatory measures can minimize negative impacts on health and reduce consequential social costs. In Switzerland, a public health perspective has been at the forefront of the debate. Therefore, the regulatory models which occupy the middle ground on the spectrum, ranging from decriminalization to strict legal regulation, are of particular interest.

### 3.2 Defining the most important research fields

There are different regulatory options aiming at an effective cannabis policy by a) minimizing social and health harms of use, b) improving public safety and order; and c) establishing a safe and responsible supply chain. Regulation options based on those principles should enable cannabis to be regulated in a responsible and controlled way. Those three fields will be explained in more detail in the following sections, in which we review the current literature in order to determine the most important fields for research and to identify research gaps. Since our compilation is based on systematic reviews, it contains the best explored topics, and is far from complete. We are aware that it is not possible to make an absolutely clear distinction between the three research fields discussed below and the respective research questions in each field. Moreover, it is also in the eye of the beholder to what extent a research question can be classified under one or to the other research field.

Some overarching questions that play into all three research areas provide a rough guiding framework for further discussion in the sections that follow. These fundamental questions are:

- What are the effects of legally regulating vs. decriminalizing the production, possession, sale and consumption of cannabis on public health and security?
- To what extent do different gradations of cannabis legalization reduce the social costs of prohibition?
- What are the advantages and disadvantages of small-scale decriminalization vs. large scale regulated market options?

### 3.2.1 Minimizing health and social harms of use

The fear of health harms and negative social consequences of cannabis legalization, especially a potential increase in use and the impact on health, is at the forefront of not only the public debate, but also many scientific studies (Mokwena 2019). According to the research literature, cannabis use is considered a risk factor for many medical conditions and harms, including mental health, somatic harm and physical injury (Campeny et al. 2020), with specific communities at higher risk (Hasin et al. 2019). Studies in US states emphasize several health implications after legalization and find an increases in the number and rates of cannabis-related visits at emergency departments (Bahji and Stephenson 2019). While some users consume cannabis without harm, others experience adverse effects (Carliner et al. 2017). Research about the question of how the legalization of cannabis affects **consumption behavior** is still new and studies have come to mixed results (Smart and Pacula 2019). Adult use appears to be increasing, however, there is no clear evidence on the impact on heavy users (Caulkins 2019). Especially in the long run, cannabis consumption is expected to increase after commercialization and as it becomes more socially acceptable (Carliner et al. 2017; Hall et al. 2019). Borodovsky and Budney (2018: 194) find "that those with mental disorders are negatively and disproportionately impacted by cannabis use, and are decidedly vulnerable to poorly regulated for-profit industries that market addictive substances such as cannabis". Several studies examine thus the risks related to cannabis use, such as developing a cannabis use disorder, cannabis abuse or cannabis dependence (Leung et al. 2020). An expansion of **treatment for problematic use**, such as motivational, cognitive behavioral therapy, and contingency management (Sahlem et al. 2018) as well as computerized interventions (Olmos et al. 2018) to reduce the frequency of cannabis use is therefore essential. Furthermore, measures in the field of **harm reduction** could be applied and explored as well, for instance vaping cannabis instead of smoking (Zobel et al. 2019). However, research in this area is still in its early stages and more evidence is needed to guide policy-making.

Sahlem et al. (2018) emphasize the increased need for **effective prevention and intervention programs**, particularly targeting adolescents, after legalization. Experience from other countries has shown that "legalization has created a cannabis industry with an interest in promoting regular cannabis use" (Hall et al. 2019: 1580). Because of the subsequent potentially undesirable effects, research on how to **facilitate lower-risk consumption while minimizing harmful consumption** is key from a public health perspective. Long-term objectives of cannabis policies often entail decreasing the prevalence of problematic cannabis consumption as well as the postponement of initial cannabis use (Decorte 2018). However, concrete measures and possible mechanisms on how to achieve these objectives are still unclear. What is more, as cannabis legalization is still quite young, long-term public health effects have yet to be assessed. **Structural restrictions** on access (locations, opening hours, etc.) or limiting the presence of cannabis and its advertising in public spaces have been implemented as form of prevention. Other approaches include regulating the different cannabis products, the weight of cannabis as well as THC potency (Borodovsky and Budney 2018). Shover and Humphreys (2019: 698) for instance find that "capping potency of cannabis products can reduce the harms of the drug, including addiction".

However, research on the effectiveness of purchase restrictions or on how to nudge consumers to less harmful modes of use is still lacking. Here, the literature on tobacco and alcohol control (nudging towards e-cigarettes, ban on sales towards minors, etc.) could give valuable insights. However, it remains open to what extent the findings can be transferred[4].

**Information about the risks** linked to cannabis use, however, is a crucial aspect. According to the review by Hall et al. (2019), measures focusing on health education for cannabis users might reduce associated harms. Consequently, training salespeople regarding public health considerations becomes critical (see Lenton 2020), especially since the commercial sale of cannabis has led to increasing diversity and potency of cannabis products (Matheson and Le Foll 2020). Additionally, research on **labeling** including health warnings and harm reduction advice becomes important. Research evidence indicates that informed behavioral choices among users might reduce the risk of adverse health outcomes of cannabis use substantially, whereby "Lower-Risk Cannabis Use Guidelines" might offer a potentially valuable tool (Fischer et al. 2017). Our literature search did not yield any review focusing on large-scale and mass-reach public cannabis prevention campaigns. According to Ghosh et al. (2016: 24), Colorado has introduced prevention messaging campaigns since "they are one of the few evidence-based interventions shown to increase awareness of harms and reduce marijuana use at the population level when integrated with community-, school-, and family-based prevention efforts", which still need to be evaluated. Furthermore, existing evidence suggests that disseminating anti-drug messages during public-service announcements may have a limited impact (Werb et al. 2011). Large anti-cannabis campaigns might even have the potential to unintentionally stimulate interest in cannabis (Haden & Emerson 2014). However, compared to other measures, the impact and efficacy of such large-scale campaigns is difficult to measure.

To **protect minors** from the negative effects of cannabis use is seen as one of the most important objectives of drug policies. Particularly research evidence about the association of adolescent cannabis use and neurological changes (Blest-Hopley et al. 2020) warrants further considerations for regulatory choices. There is little and somewhat contradictory evidence on the effects of legalizing cannabis on youth use. It can be assumed that minors would profit indirectly[5] from regulation even though they are being a priori excluded. The few available results indicate that there is no increase in cannabis use among adults younger than 21 years, although they report a lower perceived level of risk stemming from cannabis after legalization (Hasin 2018; Dilley et al. 2019). In contrast, results of another recently published meta-analysis suggest that legalization of cannabis for non-medical purposes leads to a small increase in use among adolescents (Melchior et al. 2019). Therefore, prevention campaigns (e.g. television, print media, social media, online games, etc.) have been introduced for instance in Canada as well as the US to educate consumers, especially the youth, and parents about the risks of cannabis use (Lancione et al. 2020)**.** Depending on how prevention programs are designed, they can be more or less conducive to prevent use in minors. Campaigns that only increase participants' knowledge do not reduce consumption, while more targeted family prevention strategies and family-based prevention programs might be more effective (Faggiano et al. 2014). Additionally, peer interventions are found to be a useful approach in preventing substance use (Georgie et al. 2016). Enforcing **minimum ages** is seen as critical, especially because earlier cannabis use is generally associated with higher risk for mental illnesses (Hosseini and Oremus 2019). Also, experiences from alcohol and tobacco have found a minimum purchase age to be important (Haden & Emerson 2014). In the US states, legal age of cannabis possession is mostly consistent with legal drinking age (Lancione et al. 2020). In Canada, a minimum

[4] This would be in line with the demand that cannabis prevention should be carried out in conjunction with the prevention efforts on other substances (see also FOPH 2019).

[5] This would be similar to the experience with alcohol: minors are also not allowed to purchase it, but still get products from the legal market, where they are controlled, rather than from the illicit market, where quality standards might be low.

age of 18 was adopted, allowing provinces and territories to raise the age if desired (DeVillaer 2019). Furthermore, several measures should limit child exposure, such as the prohibition of cannabis use in indoor spaces or the sealing of cannabis containers (Lancione et al. 2020). However, the topic of protecting minors also include additional considerations on passive smoking, safe packaging, etc.

According to available data, long-term effects of cannabis exposure during pregnancy are unclear. However, cannabis use in pregnant women is relatively persistent despite awareness about potential risks (Bahji and Stephenson 2019). Therefore, future research should focus on the efficacy of educational programs for pregnant women about cannabis use and appropriate recommendations for decision makers (Ahmed et al. 2019). Furthermore, **sex and gender related factors** (hormones, anatomy, roles, identity, etc.) need to be analyzed in the light of current trends (Hemsing and Greaves 2020). Since these factors influence recreational cannabis use, Greaves and Hemsing (2020) point out that gender principles should be integrated in prevention campaigns (Hemsing and Greaves 2020; Greaves and Hemsing 2020).

As research shows, a huge variety of cannabis products are consumed in a legal market (e.g. dry flowers, extracts of cannabis resin, oils, edibles, etc.). Thus, the quality of cannabis has become a major concern for **consumer safety**, which is why standards and quality controls regarding contaminants (pesticides, pathogens, toxins, molds, etc.) need to be defined and controls need to be implemented. Areas of concern are possible restrictions on product types or formats, as well as levels of THC or other cannabinoids, especially regarding the potency and purity. Furthermore, questions of effective safety or security protocols arise. Based on their review, Matheson and Le Foll (2020) suggest to minimize acute harms implementing an early introduction of restrictions on edibles and high-potency products. Charlebois et al. (2020) show how Canadians have different concerns regarding edibles and carry doubts regarding the safety of cannabis-infused food products, especially towards children and pets. Preventative safety measures and best practices with regard to edible cannabis products are crucial to protect public health (Soroosh et al. 2020), especially when "edibles and beverages continue to win over market share from dried flower, which is the traditional form of cannabis consumed through smoking or vaporizing" (Blake and Nahtigal 2019: 25). Controlling the production of cannabis and its quality, and ensuring its traceability, is crucial to minimize harms.

Lastly, according to Hall et al. (2019) the effect of cannabis legalization on alcohol use will be a major determinant of its public health impacts. Unfortunately, the current literature is still unclear on the outcome and thus on whether cannabis could substitute alcohol use or whether co-use becomes more prevalent (Hall et al. 2019: 1586). The same applies to the **co-use of other substances** such as tobacco, opioids, etc. (Schlienz and Lee 2018). Therefore, besides cannabis use trends, also other substance use trends need to be monitored. What is more, consumption patterns in European countries show that cannabis is often consumed with tobacco in a joint. Nevertheless, the synergistic effect of nicotine in the development and maintenance of cannabis dependence has been largely neglected in European research so far (Pirona et al. 2015).

To sum up, there is hardly any area of research which does not demand further investigation. In general, it should be noted that current research evidence focuses mainly on prevention efforts and less on harm reduction and the question of how to maximize the potential benefits associated with the use of cannabis. Furthermore, future regulations need to take into account existing market structures and consumption patterns in order to be effective. There is a considerable number of users who consume cannabis in non-problematic ways. Table 2 displays the most important open research questions in the field of minimizing health and social harms, which can be derived from the current state of scientific research and the experiences from other countries.

**Table 2: Research questions in the area "Minimizing health and social harms of use"**

| | |
|---|---|
| **Reduction of health harms** | <u>Physical and mental health</u><br>• *How do the different regulatory models affect the physical and mental health of consumers?*<br>• *How can the overall costs of and the demand for cannabis use be decreased?*<br>• *How can individuals with at-risk and addictive consumption be detected through regulated access to cannabis?*<br>• *What regulatory choices can be expected to have positive health effects for large parts of consumers?*<br><br><u>Consumption behavior:</u><br>• *What are the effects of different regulatory options on consumption behavior (intensity, prevalence, and incidence)?*<br>• *How can regulatory measures (e.g. opening hours, locations) be designed in order to a) strengthen prevention efforts and b) facilitate low-risk consumption while minimizing harmful consumption?*<br>• *What are the effects of different retail/sales models*?<br><br><u>Life quality & harm reduction:</u><br>• *How can regulatory measures support users' strategies of consuming cannabis in non-problematic ways and of integrating this use in their everyday life?*<br>• *What structural measures encourage informed behavioral choice and enhance the consumption competences of users? What provisions regarding "safer use guidelines" are appropriate?*<br>• *To what extent are harm reduction measures effectively implemented within the different regulatory frameworks?*<br>• *How can a regulated cannabis market enhance health literacy of cannabis consumers and prevent problematic use (information through labelling, sales counselling, and public campaigns)?*<br>• *How can the quality of life and social integration of addicted individuals be enhanced through a legally regulated access to cannabis?* |
| **Effective prevention and intervention** | • *What regulatory measures strengthen prevention efforts without pushing consumers into the illicit market?*<br>• *What regulatory measures promote screening of and early intervention with vulnerable consumers (e.g. administrative measures for youth consumers)?*<br>• *How can sex and gender related factors be integrated into regulatory frameworks?* |
| **Protection of minors** | • *What regulatory measures are important to effectively protect minors (including structural prevention measures) and therefore impede early initiation of use?*<br>• *How should prevention campaigns be designed to reduce (especially high-risk) consumption among young people and possibly facilitate low-risk consumption for young adults (e.g. graduated potency levels for different age groups)?*<br>• *What are the effects of legalization on young people's attitude towards cannabis, their perception of risks associated with cannabis use, and their probability to initiate use (early)? Does legal access foster normalization of cannabis use?*<br>• *What regulatory measures can be taken to effectively detect and support at-risk underage consumers?* |
| **Consumer safety** | • *What legal standards and quality controls regarding contaminants should be introduced (e.g. pesticides, contaminants)?*<br>• *How can the supply chain be monitored in ways that minimize health risks and social harms?*<br>• *Can access to different cannabis products be regulated gradually according to the products' potential for harm and/or their different target groups?* |

| | |
|---|---|
| **Co-use of other substances** | • *Should the simultaneous sale and purchase of cannabis and alcohol be prohibited?*<br>• *How can simultaneous use of cannabis and tobacco be reduced, and transition from cannabis to tobacco be prevented?*<br>• *How should regulatory measures be designed in order to enable monitoring the production of cannabis and its quality, and ensuring its traceability*?<br>• *How does regulated access to cannabis affect the co-use of other substances?* |

### 3.2.2 Improving public safety and order

There is widespread uncertainty regarding the potential benefits and harms of a non-prohibition-based regulatory framework for cannabis, whereas the improvement of public safety and order are important topics. The costs associated with controlling cannabis use and supply largely stem from high levels of recourse expenditures for police and the justice system, while the dissuasive effect of law enforcement is very limited. Therefore, the question arises how police activity can be incorporated into preventive, harm reducing and therapeutic measures. Future regulatory endeavors should **minimize the negative consequences of criminalization or prohibition**. Costs in this area include associated criminal activities and personal costs of a criminal conviction, risks of further criminal involvement as well as the opportunity for harder drug use provided by overlapping illegal markets.

A decriminalization approach, for instance allowing self-supply and low-level acquisition, would entail fewer of these costs compared to the existing larger-scale illicit drug market. Regularization policies aim to enforce public order and eventually remove organized crime from cannabis supply and to protect public health by regulating the supply side. Even though a legal and accessible cannabis market should eventually eliminate the illegal market, illicit activities related to cannabis might still exist, such as selling cannabis to minors. Research evidence is still unclear as to the extent to which a regulated market can **replace the illegal market**, and what key policy and enforcement approaches are effective in reducing the illegal market. For instance, studies have shown that some Canadian consumers adhere to former channels of distribution, despite legalization (Charlebois et al. 2020). It has been crucial that legal cannabis can be purchased in an affordable and convenient way (Lancione et al. 2020). Furthermore, studies indicate that the effects on the illicit market in Uruguay might be smaller than in Canada or the USA because of Uruguay's restrictive policy (Hall et al. 2019).

It is often argued that legalization of cannabis would lead to more **resources for law enforcement**, but the effects of different regulatory options on **drug-related crime** needs to be researched. In certain US states where cannabis has been legalized, cannabis-related criminal activity has decreased (Bahji and Stephenson 2019). According to Dellazizzo et al. (2020) there is research evidence from meta-analyses that there is an association between **violence** and cannabis use, especially among more at-risk populations. The authors emphasize that the mechanism between cannabis use under recent policy changes and different forms of harm-to-others need to be analyzed more in detail in order to take measures to mitigate these risks. One open question moreover is how prior convictions for possession of cannabis should be addressed (e.g. pardons) (Shover and Humphreys 2019). Expungement of prior criminal records of cannabis-related convictions that are no longer illegal as well as consequences of cannabis-related offenses in a legalized environment are seen as crucial aspects for **social justice** (Adinoff and Reiman 2019), which has initially been neglected in many countries.

Furthermore, **road and workplace safety** are an important issue as cannabis consumption is associated with significant cognitive and psychomotor effects and thus affects performance and productivity of consumers (Chow et al. 2019). The results of US studies on the effects of cannabis legalization on road safety are to date inconclusive. There seems to be no difference in the number of accidents in American states irrespective of whether they have or have not legalized cannabis (Aydelotte et al. 2017). With

respect to workplace safety and presence, US studies come to somewhat counter-intuitive results and show that workplace incidents tend to decrease, and absenteeism is reduced, which even leads to an increase in average hours worked (Darnell 2020: 23ff.). It is assumed that this can be explained by the positive health effects of cannabis use, reducing work absence due to illness and medical issues.
The question arises how adjustments to retail regulation can lead to a reduction of cannabis-impaired driving and occupational safety risks and what are effective approaches (e.g. sanctions, enforcement, testing, and prevention). All jurisdictions with a legalized market have implemented laws against drugged driving (Lancione et al. 2020). However, questions arise such as how to handle frequent cannabis users' partial tolerance to some of its impairing effects (Peng et al. 2020) Evidence indicates that blood levels of THC do not correlate strongly with the impairment level and there seems to be considerable individual variation, which makes it difficult to establish clear and reasonable thresholds (Chow et al. 2019). A literature analysis by *IRM Basel* summarizes the scientific evidence presenting three options regarding a possible threshold: A threshold of 2.2 nanograms of THC per milliliter in whole blood (including a 30 percent tolerance), above which level driving is forbidden, a threshold of 4.3 nanograms per milliliter in whole blood (including a 30 percent tolerance), above which level there is an actually measurable impairment, or a multi-stage system with both of these thresholds, whereby administrative measures would be provided for the area between the two values (Bucher et al. 2020). Roadside behavioral testing to detect cannabis-related impairment still needs to be improved (Hall et al. 2019). Comparing two cannabis-impaired driving detection methods, Ginsburg (2019) argues that general strategies to detect and prevent impaired driving (e.g. independent assessment of driving behavior based on camera material) are the preferable option rather than establishing specific methods for every specific substance or situation.

Finally, it is often debated if the legalization of cannabis contributes to **drug tourism** and what measures are appropriate to control public safety impacts of drug tourism (e.g. restrictions for foreign residents). However, experience of the Netherlands suggests that cannabis-related tourism, which is comparable to any other form of tourism, might even bring economic benefits and only few problems (Rolles & Murkin 2013). Nevertheless, there are ongoing political discussions about whether access to the so-called coffee shops selling cannabis in Amsterdam should be limited to Dutch residents (Henley 2021).

To sum up, in order to enforce public safety, public order should be promoted and criminality should be reduced. However, scientific evidence in this research area is scarce and large-scale studies would be necessary. Furthermore, in order to distinguish the effect of new regulations or approaches there needs to be a solid foundation about the status quo. Table 3 displays the most important open research questions in the field of public safety, which can be derived from the current state of scientific research and the experiences from other countries.

**Table 3: Research questions in the area "improving public safety and order"**

| | |
|---|---|
| **Criminal activities** | • *What is the influence of different regulatory options on the illegal market?*<br>• *To what extent is a legal market able to eliminate the illegal market? What conditions allow best to reach that goal?*<br>• *What are the effects of decriminalization or legalization, respectively, on criminal activities related to cannabis?* |
| **Public order and safety** | • *What measures should be taken to ensure road and workplace safety (definition of THC limits, fines, information, campaigns, controls etc.)?*<br>• *What measures can be taken to prevent cannabis-related nuisances in public spaces (e.g. number and place of outlets, opening hours)?*<br>• *How can adjustments to retail regulation lead to a reduction of cannabis-impaired driving and occupational safety risks?*<br>• *What are the effects of different regulatory models on drug-related tourism? What are the most effective strategies to minimize the negative consequences of drug-related tourism?* |
| **Policing, police organization and law enforcement** | • *What are effective approaches to prevent and detect cannabis-impaired driving (e.g. sanctions, enforcement, testing, and prevention)?*<br>• *How do different regulatory frameworks affect the resources of the law enforcement system?*<br>• *What approaches to policy coordination are the most promising (e.g., where various agencies are implicated in the policy delivery system such as police, justice, health, work inspectorate, etc.)* |

### 3.2.3 Establishing governance over a safe and responsible supply chain

The nature and level of cannabis-related costs will depend on the form of regulation in question. With a **decriminalization approach**, cannabis might be not de jure legal, but *in practice* the law would not be enforced, pursued, or administered when it comes to certain of those nominally prohibited offences (see Dutch model). As already discussed, there are different options in a partial prohibitionist approach banning some cannabis related activities (for instance, the cultivation for commercial use), but allowing others (like personal use, and cultivation of small quantities) without penalty.

The main idea of legalization is that the control of the cannabis market through responsible and controlled governance mechanisms would allow protecting public health and safety. Thus, it is important to keep an eye on the whole supply chain as well as the question of how to make use of revenues.

First, cannabis **production** begins with the cultivation and harvest of the plant material. Its subsequent preparation as well as the manufacturing of products using cannabis as a raw material, including concentrates and other derivatives, are an area in which regulations can further public health goals. This is especially important since the usability of cannabis differs much from alcohol and tobacco and there is thus great uncertainty regarding the social and health consequences of individual production steps. However, legal cannabis production can be conducted on a smaller scale, including home growing or cannabis social clubs, or on a larger scale, through government controlled or private enterprises. Consequently, apart from the commercial supply chain, it needs to be determined whether **personal cultivation** is allowed, and if yes, in what way. Home growing, as an important decriminalization approach, has been prohibited in some US states and the Canadian province of Quebec, but not in other subnational jurisdictions in Northern America. The effect of these different approaches is still not clear (Lancione et al. 2020). The literature reviewed clearly suggests that the regulation of production, however, should aim at guaranteeing product safety and quality, and at ensuring the security of

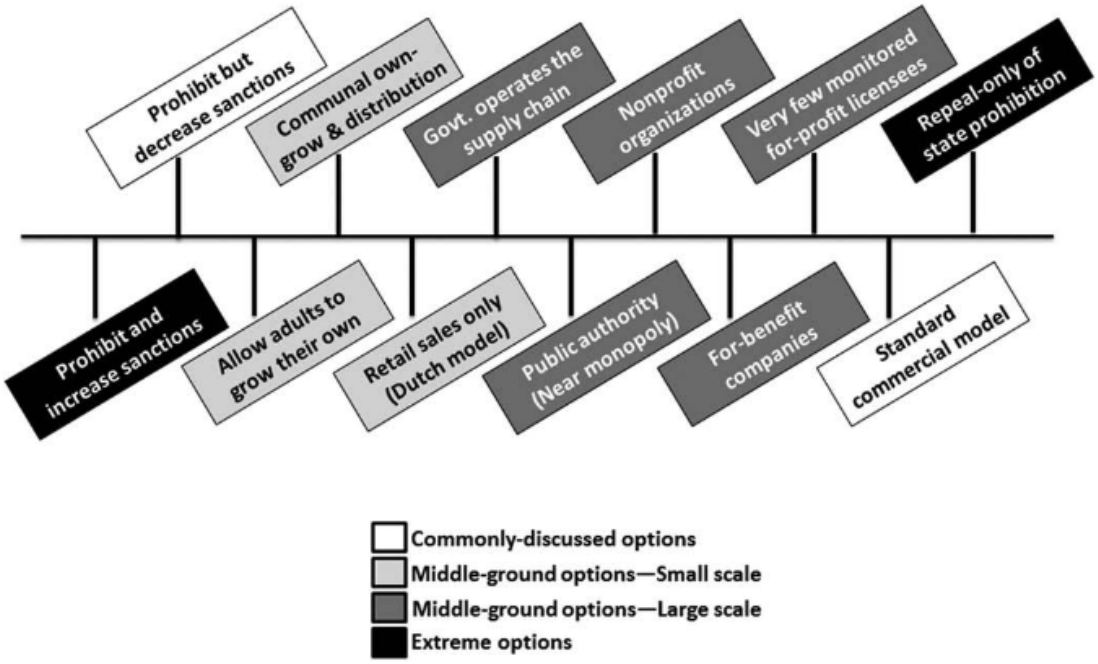
production systems (Rolles & Murkin 2013). Therefore, questions of effective safety or security protocols arise. Unfortunately, no standardized protocols for potentially harmful pesticides detection exist to this day (Taylor and Birkett 2020). The reflection on the production and processing dimensions, furthermore, might also build on the existing experience with the production system of cannabis for medical use, where despite a variety of objectives a certain know-how (e.g. regarding compliance with product safety standards) already exists (see for the Swiss context Mavrot et al. 2019).

Second, **processing and distribution** are the next steps. A distribution system needs to control the chain of custody in order to guarantee high product quality. Furthermore, there is a plethora of regulatory options regarding labeling and packaging (warning labels, childproof, declarations, safety measures, etc.). Clear and consistent labelling that communicates important information (e.g. health risks) as well as key product information related to contents (e.g. dosage, potency, ingredients) to the consumer has been found to be critical in order to minimize harms of use (Matheson and Le Foll 2020). However, Rolles and Murkin (2013: 9) emphasize that regulatory models need to be designed according to local patterns of use "given that cannabis comes in many different preparations and can be consumed in a variety of ways". Governments can adopt policies to mitigate the negative consequences, such as **restrictions or bans on advertisement and promotion** (Hall et al. 2019). In this respect, cannabis regulation can benefit from lessons learned from the regulation of alcohol and tobacco (Haden & Emerson 2014).

Third, regarding **retail and sales**, a regulated system has the potential to provide consumers with safe access to cannabis. This fosters the minimization of potential risks to consumers and the involvement in the illicit market. There are different options ranging from a centralized government monopoly to non-profit organizations to specific cannabis shops and private enterprises. Past experience with alcohol indicates that public monopolization is generally a preferable option with regard to public health and welfare interests (Room and Cisneros Örnberg 2019). The aim of the Uruguayan model, for instance, is the close control of the market by the state, realized through different forms of access to recreational cannabis (individual self-production, as part of cannabis social clubs, or in pharmacies). In Canada, a mix of publicly and privately run retail structures, as well as online sales, have been introduced on a provincial and territorial level (Lancione et al. 2020). Online purchasing of cannabis is seen as vital to increase access in more rural areas for instance, but has also been more commonly used in times of the Covid-19 pandemic. However, research evidence in this field is missing to date.

As displayed in Figure 2, there are several alternatives ranging from home-growing-only models to allowing profit-maximizing firms (Kilmer 2019). Besides of the commonly-discussed prohibition and standard commercial models, there are many middle-ground options such as co-operatives or non-profits, in which for instance public health advocates are part of the board (DeVillaer 2019). This options could be situated in the middle of Figure 1, where health and social costs could theoretically be reduced the most. Therefore, more research on these middle-ground options is necessary which can be differentiated into decriminalization approaches (small scale middle ground options) and strictly regulated and controlled markets (large scale middle ground options).

**Figure 2: Spectrum of different policy options available**




**Source: Caulkins and Kilmer (2016: 111).**

To establish effective control, a commercial model with a **licensing system** is seen as another way to go. License categories for growing, processing, and selling cannabis as well as restrictions on horizontal or vertical integration are regulatory options here. Horizontal integration includes mergers and large-scale acquisitions which can reduce the operational costs, vertical integration refers to companies that control more than one aspect of the supply chain. An example here would be a company that owns everything from cultivation to retail locations for their products (see also Hall& Lynskey 2020). Restricting the number of licenses would make it easier for the state to control the number of businesses or could prevent an over-supply of cannabis potentially leading to a price collapse in the market. Scientific literature on the variety of rules and regulations regarding licensing tends to be descriptive and it seems to be too early to provide evidence on the various consequences of different licensing models.

Fourth, another important aspect concerns **pricing and taxing,** where the goals of health protection and of displacing the illegal market need to be balanced. Low prices could encourage consumption, but high prices would make it difficult to compete with the illegal market. Experiences from alcohol show that taxes are highly effective as a means to influence price and thus reduce consumption and harm, however, this depends on the governmental control of the total supply side (Haden & Emerson 2014). Studies show greater preference of users for legal cannabis up to a certain price point and highlight the importance to study the demand side (Aston and Meshesha 2020). Minimum unit pricing or taxation by weight are thus seen as an important lesson to guide cannabis policy (Shover and Humphreys 2019). However, experience from the first US states to legalise cannabis has shown that cannabis prices have decreased by up to 50%, whereas the average potency of cannabis flower has increased (Hall et al. 2019). Consequently, policy papers also mention a THC potency-based minimum price or a linear/progressive taxation by THC-content (Canada. Task Force on Cannabis Legalization and Regulation 2016). Lastly, revenues gained through taxes could be used for prevention, research purposes and accompanying measures (Zobel et al. 2019). However, introducing adequate taxation in practice and into existing tax frameworks is seen as one of the main challenges (Ploeg and Baptista-Leite 2018).

Last but not least, there is significant interest in the **economic potential** and new revenues that the cannabis industry will bring (see also section 6.1). Promises of economic growth and prosperity by a future market especially for producers and farmers are at the forefront of many legalization debates (Caulkins and Kilborn 2019). Thus, decisions on production, distribution and retail have clear implications for businesses, including how to ensure diversity of participants and **to restrict corporate influence** (DeVillaer 2019). Evidence from alcohol and tobacco control show how commercial interests can trump public health priorities if the risk of over-commercialization is not well regulated. Experience from other countries, such as Canada, has shown how a cannabis industry grows quickly and becomes a powerful player with significant lobbying resources (Jesseman 2019). Decision-making in US-states was dominated by aspects of commercialization and tax revenue generation, putting the public health agenda on the sideline (Rehm and Fischer 2015: 451). Holding the industry accountable to regulatory provisions is therefore essential. Kilmer (2019) emphasizes that the type of agencies involved with enforcing new regulations could have major impacts for health outcomes. In particular, protecting science and public health from corporate interest is crucial and the funding of studies by lobbies might be prevented by respective restrictions (Shover and Humphreys 2019). The history of alcohol and tobacco control is littered with examples of commercial interests trumping public health priorities. Regulators should learn from this experience and ensure that the legal cannabis trade is not susceptible to similar industry manipulation

Local businesses and products could constitute a preferable market model, compared to domination by multinational corporations, in order to establish an efficient, accountable and transparent system for regulatory oversight of the supply chain, emphasizing the protection of health and safety and reducing diversion to the illicit market. However, with high regulatory standards regarding production and products, it might be difficult to stay competitive. Experience from tobacco regulation indicates that it is an empirically open question whether a highly regulated market is a more promising option from a public health perspective compared to businesses and producers in strong competition to each other. Although **social justice and equity** goals were set, encouragement of diversity in the cannabis industry and funding of equity programs has been very limited to date (Adinoff and Reiman 2019). Regardless of the model chosen, research emphasises the **role of well-trained employees to inform consumers** about the risks of use and about different product types available (see Lenton 2020).

To sum up, there are different regulatory options to mainly influence the supply side – legalizing cannabis and establishing a control structure over the whole supply chain, or decriminalizing some aspects. In the case of the former, research points out the importance of an oversight body in order to reduce the profit motive to promote sales and the potential influence of corporate interest which would benefit from relaxed regulations. Furthermore, even though regulations for recreational and medical cannabis use have been mostly separated, they are often conflated. Table 4 displays the most important open research questions in this field, which can be derived from the current state of scientific research and the experiences from other countries.

**Table 4: Research questions in the area "Establishing governance for a safe and responsible supply chain"**

| | |
|---|---|
| **Control structure** | <u>Overarching questions</u><br>• *What are the advantages of different licensing approaches regarding cultivation, processing, and selling cannabis?*<br>• *How can future cannabis legislation and research be protected from corporate influence?*<br><br><u>Economic and equity aspects</u><br>• *What is the economic potential of an entirely or partially legalized cannabis market for Swiss producers and retailers compared to the status quo?* |

| | |
|---|---|
| | • *What can regulators learn from the experience of alcohol and tobacco to minimize industry manipulation of legal cannabis trade?*<br>• *What regulatory options are effective in mitigating the risk of commercialization?*<br>• *What are the advantages and disadvantages of completely banning a commercial market?*<br>• *What consequences do different regulation approaches have on equity and social justice outcomes?*<br>• *How can social equity be promoted from the very beginning? What kind of programs should be developed to support the inclusion of less advantaged and disproportionally affected groups in the industry?*<br>• *What are the overall costs for society caused by the different regulatory choices (prohibition, decriminalization, legalization)?*<br><br><u>Policy implementation</u><br>• *What regulatory competences need to be situated on what state level (national, cantonal, municipal)? What are the risks and opportunities of a multi-level governance approach?*<br>• *How can coordination between cantons be improved in order to facilitate harmonization of implementation?*<br>• *How can regulations of medical and non-medical cannabis use be separated while still supporting and not hindering each other?*<br>• *How should partnerships between the state and private actors in policy delivery (professional groups, producers, etc.) be established?* |
| **Production** | • *How should the regulation of cannabis production be designed to guarantee product safety and quality and ensure the security of production systems?*<br>• *What are the effects of the legalization of home-growing and personal cultivation of cannabis? How is government oversight under such a model feasible?*<br>• *What are the regulatory options for product testing, evaluation and oversight of the production process?* |
| **Processing and distribution** | • *What provisions should be taken for the processing and distribution of cannabis?*<br>• *What kind of limitations should be implemented regarding promotion?*<br>• *How should packaging and labelling be regulated in order to match local patterns of use and promote public health goals, thereby allowing a more efficient promotion of public health goals?* |
| **Retail** | • *How should a retail system be regulated to accommodate public health and safety concerns?*<br>• *Which sale setting is most likely to make users abandon their usual (illegal) sources of supply to promote the positive effects of a new regulation?*<br>• *What regulatory restrictions on sale and purchase are effective from a public health viewpoint (access and availability restrictions, rationing, purchases only up to a certain amount, etc.)?*<br>• *What are the opportunities and risks of different retail/sales models (e.g. shops vs. online sales)? Are state-run cannabis outlets preferable to commercial outlets in terms of public health?* |
| **Consumption** | • *What is the evidence of the public health effectiveness of bans on cannabis use in public spaces?*<br>• *What are advantages and disadvantages of different restrictions on the location of use from the perspective of public health and safety?*<br>• *How should locations of allowed consumption be regulated and monitored?* |
| **Pricing / Taxing** | • *How do pricing and taxing influence consumption patterns (changes in patterns of use, local priorities, etc.)?* |

| | |
|---|---|
| | • *How can a balanced pricing and taxing structure be established that simultaneously ensures competitiveness with the illegal market and a sufficiently high price to restrict youth access and limit consumption?*<br>• *How can revenues be allocated in order to promote social equity, prevention and research efforts?* |

### 3.2.4 Summary: logic model of cannabis regulation

As discussed in chapter 3.1., the primary goal of sound cannabis legislation is to reduce cannabis related costs. This principle of cost minimization needs to be taken into account when comparing the success of differing approaches to cannabis. Therefore, a full and comprehensive array of costs associated with cannabis needs to be investigated. Even though research in this field is growing, more scientific evidence on the "impact of variations in regulatory policies on potential harms of legalization to inform future policy decisions" is needed (Lancione et al. 2020: 7). We summarize the different aspects discussed in the previous sections in a logic model[6], which was validated by the advisory group (see Figure 3).

The left side displays various **regulation options** such as the supply architecture. Important regulatory questions concerning cannabis legalization and decriminalization arise: Who can produce which products? Where, when and which amount of cannabis can be sold? And where can those products be used? Different regulatory choices in the different subfields ranging from production, over distribution and processing, retail and consumption finally to pricing and taxing need to be defined. In order to realize and implement different regulation options, various public, private or other actors from different areas might be involved. For all possible actor constellations, cooperation plays a central role. We focus our inquiry on the so-called middle-ground options as already mentioned earlier – ranging from decriminalized self-cultivation over state monopoly to a strictly regulated commercial market. Those policy decisions will affect the consequences of any regulation endeavor as they have different advantages and disadvantages regarding the aims of minimizing the harms of use, enforcing public safety and order, as well as establishing a control structure over a safe and responsible supply chain.

Following the international and national discussions about the underlying long-term goals of cannabis legislation and with reference to Art. 2 Abs. 2 BetmPV, the following four main objectives regarding **impact** can be formulated (see right side of the logic model):

- Promotion of individual and public health
- Protection of children and minors
- Reduction of criminality
- Effective and equitable governance

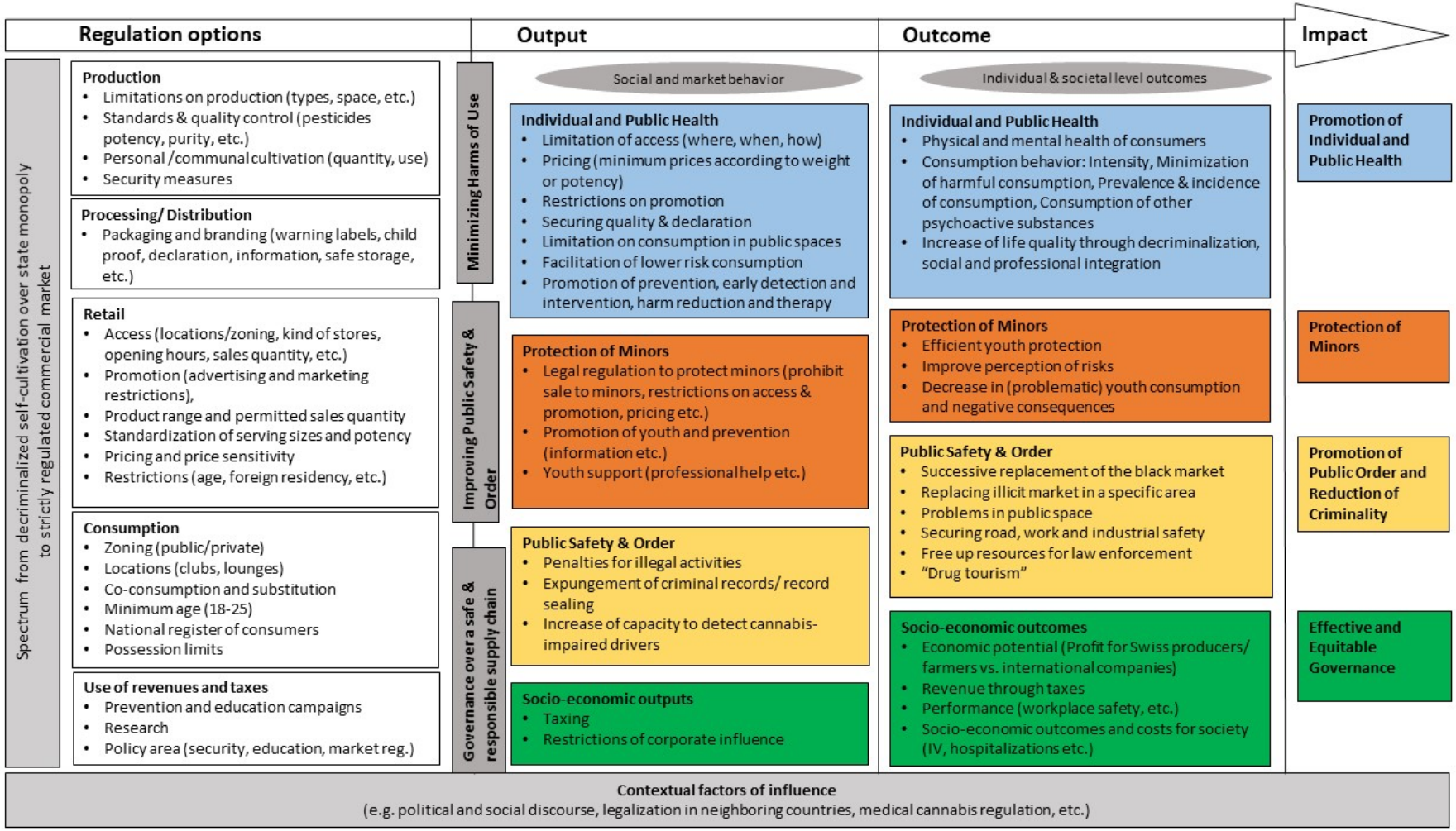
Whereas the main emphasis in Uruguay was laid on the reduction of criminality, in Canada a public health perspective was essential when developing the regulatory framework. Identifying a clear purpose to drive the overall approach is seen as a key aspect to determine which legislative approach to cannabis would be the best, or most successful (Canadian Centre on Substance Abuse 2015).

The different possibilities to intervene, such as restricting the influence of the industry or prohibiting sales to minors, are illustrated in the **output** row, where the different intervention components can

[6] According to Anderson et al. (2011: 34) a "logic model is a graphic description of a system and is designed to identify important elements and relationships within that system". Therefore, it can be used not only in planning and evaluating public health programs, but also as an analytic framework for systematic reviews. Logic models help to identify the complex links between determinants and the different outcomes, thereby encouraging the translation of evidence into policy.

target social as well as market behavior. The different (desired) individual as well as societal effects such as the control of the drug market or the mental and physical health of consumers are summarized in the **outcome** row. We identified four different categories alongside to the four desired long-term impacts, whereby a significant amount of overlap and interdependencies exist as well.

**Figure 3: Logic model of cannabis regulation**




**Source: own illustration**

There are several tensions in the model between different goals such as between public health protection and a liberal revenue-driven market with potentially harmful products (DeVillaer 2019) having a "desire to maximize sales and profits" (Caulkins and Kilborn 2019: 689). Another tradeoff exists between the goal of keeping prizes low and minimizing taxes to reduce the illegal market on the one hand and imposing high prizes or taxes to discourage heavy use on the other (Canadian Centre on Substance Abuse 2015). There are not only conflicting objectives; tensions can also arise within one objective: from a public health perspective, the question arises whether to advocate indoor use, risking poor air quality and passive smoking, or outside use, even if that normalizes cannabis use (Caulkins and Kilborn 2019). Furthermore, restricting consumption to in-house use only could discriminate against marginalized groups such as homeless people. Another balancing act can be found regarding the different levels of government. Research emphasizes that authority for oversight should remain at higher levels of government endowed with more extensive resources and therefore potentially less vulnerable to industry pressure, while local government should still have the ability to adapt to its specific conditions (Caulkins and Kilborn 2019).

Lastly, there are also **other contextual factors** of influence, such as the regulation of medical cannabis. As experience from other countries shows, recreational use of cannabis was mainly legalized after regulations were loosened with regard to medical use of cannabis. Shover and Humphreys (2019) identify in their narrative review lessons from other policy areas such as alcohol or tobacco, which are already more established, to guide legalization for recreational cannabis. However, in what ways similarities and differences exist is still an open debate. To what extent learning from tobacco and alcohol can be transferred to the regulation of cannabis is an important research inquiry. Other contextual factors include public opinion, political debates as well as the specific cultural context of a country, which influence the social acceptance of a policy. For instance, Switzerland has a very liberal tradition with substances compared to other countries. Not least, international developments also play an important role and might increase pressure for policy change (Brunner and Kübler 2019).

To sum up, understanding effects of cannabis laws requires greater attention to differences in short-term versus long-term effects of the laws, nuances of policies, and patterns of consumption. It is important to create a **comprehensive public health monitoring and evaluation system** for cannabis regulation, in which metrics about not only possible risks but also the potential benefits should be reported (Lake et al. 2019). Many researchers have noted that a concerted effort to create a cannabis data collection systems is necessary for creating effective regulation (Borodovsky and Budney 2018), while getting access to relevant governmental and corporate data has been seen as challenging. Despite the growing research field, there is still a paucity of literature on a variety of implications related to cannabis legalization. As we have seen, some available studies are fairly heterogeneous in their findings (Bahji and Stephenson 2019). As there are trade-offs between and within different objectives, it is important to distinguish those different fields and make clear what the goal of a specific measure is.

Future research questions should directly speak to the overarching question formulated in section 3.1 and thus offer more insights on how social and health costs of cannabis consumption can be reduced. An optimal protection of health can be ensured if the negative effects of an under regulated legal as well as an unregulated criminal market are minimized. In the next section, we will therefore prioritize the different research fields in the Swiss context, before we then discuss which questions can be analyzed within the framework of the Swiss pilot trials and which questions need to be addressed with different, complementary research.

# 4 Prioritization in the Swiss context

As a consequence of international developments, the central question today according to the former Federal Commission on Addiction (*"Eidgenössische Kommission für Suchtfragen" EKSF*) is no longer whether regulation is needed instead of complete prohibition, but rather how cannabis should be regulated to minimize risks and increase public health benefits. The protection of the public and the control and regulation of the market are seen as fundamental axes of a potential cannabis regulation in Switzerland (Zobel et al. 2019: 26-29). In this chapter, we will take this principle as a starting point to identify research questions of priority for Switzerland. Even though we base our prioritization on objective criteria such as the political debate and current research evidence, priority order lies in the eye of the beholder at least to some extent. The central research fields presented below will subsequently be discussed in decreasing order of priority.

Not only is the relationship between evidence and policy complex, but the concerns, priorities and values expressed by different stakeholders and the public are important for future steps. It is thus important to situate the potential pilot trials and possibilities of cannabis regulation into the political landscape. Therefore, we briefly discuss the characteristics of the current political debate on cannabis policy in Switzerland. The political debate is mainly characterized by two different viewpoints (Brunner and Kübler 2019; Wenger et al. 2014). Supporters of an approach focused on *abstinence* highlight the negative effects of cannabis use and push for repressive measures. This view holds that the aim of cannabis policy is to minimize the use of cannabis (and all drugs). Supporters of the *harm reduction* approach emphasize that prohibition not only failed, since many people still regularly use cannabis in Switzerland, but also has many serious negative consequences. After lengthy parliamentary debates, these different viewpoints were brought together in the so-called experimental article for pilot trials. A majority of members of parliament ultimately approved the corresponding amendment of NarcA, on the condition that future pilot trials investigate the central issues of cannabis regulation in an unbiased and open-ended manner.

### 4.1 Promotion of individual and public health

Despite different standpoints, the four-pillars-policy consisting of 1) health promotion, prevention, early detection, 2) treatment and counselling, 3) harm reduction and minimization of risks, and 4) regulation and enforcement, enjoys large support within the whole political spectrum (Brunner and Kübler 2019). It constitutes the basis of the government's National Strategy on Addiction (2017 – 2024) which emphasizes the strengthening of health literacy, the creation of favorable conditions, the differentiation of risks, the assessment of consumption and behavior as well as early support as its core objectives (Swiss Confederation - The Federal Council 2017). This strategy also provides the overall framework for the cannabis pilot trials. Hence, priority research questions in the field of individual and public health should allow addressing the four overriding objectives of the strategy. In conjunction with the findings from international research, the following research fields can be formulated:

- **Prevent addictive disorders and high-risk consumption:** In this context, the main question is what structural strategies are effective to strengthen prevention efforts and to facilitate low-risk consumption. Future research should therefore deliver more insights into the debate on whether a decriminalization approach or a strictly regulated cannabis market can enhance health literacy and competences of individuals. Furthermore, there are different regulatory options aiming at restricting access, promotion, etc. Another pivotal instrument is pricing and taxing (minimum pricing according to weight or potency, etc.).

- **Provide individuals at risk with the necessary help and treatment:** It is often argued that the prohibited status of cannabis deters individuals who are at risk, who show problematic consumption patterns or who are addicted from seeking out professional help. Therefore, the legal or decriminalized access to cannabis should facilitate early support and treatment. Whether the quality of life and social integration of addicted individuals can be enhanced through a legal/decriminalized access to cannabis remains a pivotal question. With regard to those who consume cannabis in a harmful manner, research emphasizes that problematic consumption is often caused by or co-occurring with circumstances in which individuals face difficulties or distress related to their environment. This should be considered in order to identify segments of users who are at a higher risk in terms of their socio-economic living conditions (and, potentially, other social factors that have not been identified yet**).**

- **Mitigate damage to health and social harm:** A clear priority can be found in the question whether controlling the supply chain – partially or in its entirety – minimizes health risks and social harms. Therefore, quality and control standards should be introduced (e.g. pesticides, contaminants). Here, the physical and mental health of consumers should be at the forefront, including preventing problematic use by providing them with information. Therefore, the question arises as to what effect the different regulatory options have on consumption behavior (intensity, minimization of harmful consumption, prevalence and incidence of consumption, consumption of other substances). Additionally, in contrast to an ultra-prohibitionist approach, there is a wide range of harm reduction options that have not been fully researched to date (the risks of different modes of cannabis use, gradual regulation according to the products' potential for harm and the different target groups, etc.).

- **Reduce negative impacts on society:** Lastly, not only effects on the individual, but also the society as a whole need to be investigated in depth, and thus the overall costs of decriminalized/regulated access to cannabis (hospitalizations, disability/unemployment insurance, workplace performance, road safety, etc.).

In conclusion, an analysis of how the various cannabis regulation options affect not only the individual person and their behavior, but also the societal framework including the overarching social, economic, and cultural context, the living and working conditions, as well as the social setting, is crucial in order to gain more knowledge about how to create a favorable environment.

Firm evidence on the public health impact of various regulatory measures is relatively scarce. While there are several papers that look at the public health impact of legalization, the studies often come to different conclusions. In particular, two points prevent the production of conclusive results that are directly relevant for Switzerland. First, the time dimension needs to be mentioned. In their article on the effects of the legalization of recreational cannabis use in the United States, Hall and Lynskey (2020) stress that even Washington and Colorado, the first states that legalized recreational cannabis, can only look back on about six years of experience with their legal cannabis markets. This is considered too short a period to fully assess the effects of legalization. This is even truer for Canada and Uruguay, where legalization occurred more recently. It takes decades to reliably identify the public health effects of legalization. Second, the context-dependency of the currently available evidence needs to be mentioned. Transferring evidence from vastly different cultural and political contexts is not an easy undertaking (Fischer et al. 2020a). Behavioral insights from the handling of other psychoactive substances might help to design effective interventions in accordance with the different target groups (recreational/dependent users, vulnerable groups, parents, professionals, etc.). Finally, a lesson learned from our international workshop is that there are still many open questions regarding the measurement of individual and public health impacts of cannabis use and legalization. Further efforts should continue to be made to

develop standard instruments and questionnaires to monitor cannabis consumption behavior and health risks to produce the high-quality data needed to answer the important questions in this realm.

In this context, experience from North America and Canada in particular shows that profit-oriented companies (e.g. alcohol or tobacco firms) develop into powerful players on the cannabis market relatively quickly after legalization and try to influence legislation in their favor (Transform Drug Policy Foundation 2020b; Jesseman 2019; Transform Drug Policy Foundation 2020a). They try to repeal regulatory measures or to circumvent them (e.g. by means of new products). These attempts to influence and/or avoid legislation make it impossible to consistently align policies with public health or the protection from negative impacts on society. With a look at Canada, it is even said that "despite the prohibition of direct cannabis advertisements and promotion, a vastly expansive cannabis industry […] is driving a commercialized environment in which the armory of public health may simply be too slow and weak for effective checks and protections" (Fischer et al. 2020a: 187). The dilemma of legalization is that meaningful information on its costs and benefits is not available for a well-informed decision-making until after legalization. By then, a profitable industry that also generates substantial revenue for the government has usually already emerged, and it is too late to reverse this development (Hall et al. 2019: 1587). Future research must therefore address the question of how regulatory measures in Switzerland must be specifically designed and introduced in order to prevent corporate capture as far as possible. This is especially important in Switzerland having a very liberal approach to other substances such as alcohol and tobacco.

### 4.2 Promotion of public order and the reduction of criminality

Whereas the reduction of criminality and the exposure to organized crime has been at the forefront of many legalization debates, such as in Uruguay, problems with organized crime or criminal activities are not the main motivation to overthink cannabis policy in Switzerland. While the potential replacement of the illegal market has been an argument for the introduction of a regulated legal market, the other main advantage highlighted is the issue of consumer safety by establishing and controlling the supply chain. The decriminalization of consumers has been widely discussed. In the administrative fines, a solution supported by a majority was found, even though many are not completely satisfied with it (Brunner and Kübler 2019). Research evidence on the effects of legalization on drug-related crime and the illegal market is still scarce. Insights from our international workshop and the literature suggest that long-term implications depend on how criminal organizations will react to a newly established legal market for non-medical cannabis. To date it is not clear whether they will switch to other (more potent) substances, which are still illegal, or if they might even target specific groups such as minors or addicted users. Experience from Canada has shown that the latter tend to still buy their products in the illegal market, as restrictions with respect to quantity or potency discourage them.
Beside the effect on criminal activities, there are two other core areas which are relevant in the Swiss context. In the following, the three priority areas will be discussed shortly:

- **Criminal activities:** The effects on the illegal market are clearly a research priority at the forefront of many political and public debates. Therefore, new insights could or should inform future regulations. Seeking to displace the illicit market over time requires the establishment of a competitive legal market (including safe and reasonable access, price, product choice, etc.) Therefore, excessive restrictions could lead to the re-entrenchment of the illicit market. Conversely, inadequate restrictions could lead to an unfettered and potentially harmful legal market.

- **Public security and order:** Security and order in public spaces need to be maintained by controlling for cannabis-related disturbances. This also includes preventing and sanctioning

driving as well as certain professional activities when under the influence of cannabis as an important aspect to guide regulation models (Zobel et al. 2019).

- **Policing, police organization and law enforcement:** Another priority research question includes the effects on policing and the resources of law enforcement, which are an often discussed area. The success of the four-pillars-approach is based on the good cooperation between different stakeholders and the necessity to work together in the implementation phase (see also section 6.2), which was evident in the wake of the drug crises in the 1990s. Therefore, the police play an important part, as also under decriminalized or legalized cannabis access, regulations need to be enforced and certain activities remain illegal (sharing/selling products with/to minors, etc.).

Concluding, the different regulation options should be contrasted with the status-quo in order to inform future debates on cannabis regulation. Therefore, it is not only crucial to monitor these three areas closely when introducing new regulations in the context of the pilot trials or future legislation, but also conduct research on the point of departure.

### 4.3 Protection of minors

Another issue which has to be prioritized in the Swiss context is certainly the impact on the protection of minors. First, there is relatively little scientific evidence from international studies. A recent article on cannabis legalization in Canada concludes: "It is far too soon to know how increased access to cannabis for non-medical use will impact Canadian youth, and data from jurisdictions in the United States that have legalized cannabis remain unclear" (Watson et al. 2019: 473). Second, recent figures on cannabis use among youth in Switzerland show that consumption is widespread. An international comparative study by the World Health Organization (WHO), which used surveys, concludes that nowhere are schoolchildren in Europe more likely to use cannabis than in Switzerland: 27 percent of 15-year-old boys say they have already used cannabis. At 17 percent, use among girls is also in the upper middle range (Carli 2020). Third, the protection of minors seems to be a central dimension in public and political debates about the regulation of Cannabis in Switzerland.

For an effective protection of minors with regard to drug use, the approach in Switzerland is founded on different pillars[7]:

- **Legal regulation to protect minors** ("Gesetzlicher Jugendschutz"): Here the question of efficient youth protection is at the center stage. With regard to legal aspects, a minimum age of 18 has already been defined for the pilot trials. Similarly, it is illegal to sell cannabis products to minors in other countries that have already legalized cannabis (although with different minimum ages). In addition, access restrictions, price regulations such as taxing or minimum prices for certain products, or restrictions on promotion might be in place.

- **Promotion of youth and prevention** ("Jugendförderung")**:** These measures are directed towards all minors and contain adequate information as well as the development of important life and health competences such as handling stressful situations, group pressure, etc. It is often argued that the illegality of cannabis can act to deter young people in particular from seeking

[7] More information can be found here: https://www.bag.admin.ch/bag/de/home/gesund-leben/sucht-und-gesundheit/regulierungen-suchtbereich/jugendschutz.html

comprehensive information about the harms and effects of cannabis use. In contrast, it is feared that non-prohibitionist approaches would lead to a trivialization and thus create wrong signals or conflicting prevention messages. Therefore, the question arises to what extent different regulatory options affect the perception of risks and the health competences of young people.

- **Youth support** ("Jugendhilfe"): If young people are at-risk or already show problematic consumption behavior, recognizing these problems and intervening early is a crucial. In case negative consequences (school, job, family, etc.) are already noticeable, assistance and provision of services such as therapeutic offers need to be provided. The prohibited and criminal status of cannabis use might discourage youth from seeking out professional help. The pivotal question is to what extent (problematic) youth consumption and negative consequences for young people with addictive behavior can be reduced.

An analysis of the different structures and framework conditions related to the various cannabis regulation approaches is important in order to contrast the different effects as well as barriers and advantages they have with regard to the three listed areas.

### 4.4 Effective and equitable governance

This last area encompasses different social as well as economic aspects. Before introducing a new legal framework, knowledge about the current state of cannabis production and consumption and its inherent structures and processes is crucial in order to develop the adequate incentives for users and producers. Therefore, the long-term objectives of prosperity, social justice and equity refers to the demand as well as the supply side.

Legalizing access to cannabis should not only strip criminals from profits, but also offers an opportunity for a new industry. Within the Swiss political debate it was mentioned that if cannabis was to be legalized, it must be organic and grown in Switzerland. Profits for Swiss farmers have been presented as an argument for legalization or decriminalization in the public discourse (see also section 6.1).

In addition to a commercial model of cannabis production, small-scale decriminalization approaches are also a priority for research. The different effects of the middle-ground option, ranging from decriminalized self-cultivation over state monopoly to a strictly regulated market, need to be contrasted in order to gain more knowledge about the advantages and disadvantages. For instance, Uruguay has legalized and Australia has decriminalized home-growing. A potential future regulation could concern the regulation of a seed market that allows home-growers to use cannabis varieties.

Another aspect that would need to be explored in future studies concerns social justice and equity. From international experience we learned that this issue has been often neglected. The non-legalized cultivation, possession and consumption of cannabis leads to the criminalization and stigmatization of sections of the population, especially among the younger and socioeconomically disadvantaged (Fischer et al. 2020a: 187; Todd 2018). Experts describe the handling of cannabis by the authorities as extremely inconsistent in Switzerland as well as in other countries (Schoop 2019). Depending on the canton, misdemeanors are punished differently, sometimes resulting in serious consequences for those affected. Different interpretations of unclear regulations and unclear powers of law enforcement can cause legal arbitrariness and injustice (Herzig et al. 2019).

Following Shover and Humphreys (2019: 700) on policy lessons relevant to cannabis legalization and the reviewed literature, the following priority areas can be formulated:

- **Effective and equitable governance:** The pivotal question here is how to establish regulatory oversight of the whole or parts of the supply chain in an efficient, accountable and transparent manner (best practices and guidelines, licensing and control system, tracking, etc.). The different effects of models from decriminalized self-cultivation over state monopoly to a strictly regulated market need to be contrasted in order to gain more knowledge about the advantages and disadvantages in minimizing health and social harms. The economic potential of a legal cannabis market for Swiss producers and retailers is another important field of investigation, which includes how to create a diverse, equitable, and inclusive industry (big corporations vs. Swiss farmers). The restriction of corporate influence and the protection of science and regulation is crucial. Lastly, it would be necessary to find suitable policy implementation solutions for the Swiss context (capacity and infrastructure, oversight, federalism, multi-level governance, etc.). This also includes adequate communication with the public as well as the funding for research and surveillance (see also chapter 7).

- **Supply Chain:** Regulatory decisions on production, distribution, retail and consumption not only have clear implications for businesses hoping to enter the cannabis market, but also for the different long-term objectives. Therefore, on each level the different options (restrictions on access and promotion, product range, standards and quality controls, limitations and caps, etc.) and their consequences need to be analyzed. This also includes the question of pricing and taxing in a way that makes it possible for a legal market to compete with the illicit market while not encouraging increased consumption. Developing an adequate pricing scheme should be a priority as research has shown that drug use is responsive to price (Shover and Humphreys 2019). In this area it would be especially helpful to see to what extent we can learn form other fields such as alcohol and tobacco regulation research.

# 5 Pilot trials

In this chapter, we first discuss the legal framework for conducting scientific pilot trials with narcotic drugs of the effect type cannabis in Switzerland with the goal of an evidence-based support for future legislation/ regulation. Second, we present some preliminary insights on ongoing reflections about potential pilot trials. Subsequently, we discuss considerations on which research questions can be investigated within the framework of pilot trials and where these pilot trials reach their limits. Possibilities for complementary research will be introduced in the following chapter.

## 5.1 Legal framework

The Ordinance on Pilot Trials under the Narcotics Act (BetmPV) adopted by the Federal Council at the end of March 2021 provides the legal framework. Article 2 sets out the basic objectives for pilot trials. According to Article 2, paragraph 1, only those pilot trials may be carried out that serve to gain scientific knowledge about the effects of measures, instruments or procedures, namely distribution systems, concerning the handling of drugs of the effect type cannabis for non-medical purposes.

Furthermore, according to Art. 2 Abs. 2 BetmPV the projects should deliver insights about:

a. physical and mental health of consumers and their performance;
b. consumption behavior;
c. socio-economic aspects;
d. the drug market in a specific area;
e. the protection of minors;
f. public order and safety.

There are exceptions for the pilot trials for some provisions of the NarcA. These include the prohibition of placing narcotics of the cannabis effect type on the market, the obligation for physicians to dispense cannabis only in accordance with the recognized rules of medical science, and for pharmacies to dispense cannabis only on medical prescription (Art. 3). Pilot trials are limited to one or a few municipalities and to a maximum of five years with the possibility of a one-time extension by two years (Art. 5). Furthermore, the number of participants may not exceed 5000 (Art. 6). Only adult individuals who can prove that they already use narcotics of the cannabis effect type are eligible to participate (Art. 14). This means that the effects of regulatory changes cannot be investigated. In addition, there are requirements regarding the origin of the cannabis, product quality, packaging and product information, points of sale, and monitoring of the health status of the participants. The FOPH is responsible for approving project applications, for which applicants must fulfill various conditions that will not be discussed further here (see Articles 21 to 26 BetmPV). In addition, there is an obligation to provide information and reporting to the FOPH, which also performs a supervisory and control function. Thus, for the implementation of pilot trials, extensive requirements must be met, which can be explained by the preceding political process.

## 5.2 Preliminary insights and ongoing reflections by researchers

For the preparation of this report, we were in contact with various researchers and experts who have reflected on possible research designs for future pilot trials in Swiss cities. We are aware of six research teams involved in the process of elaborating research designs for pilot trials in some of Switzerland's largest cities: Bern, Basel, Geneva, Lausanne, St. Gallen and Zurich. At least two of these research teams are also considering to extend their investigation to partner cities. While there are common themes, each project sets different accents. There are thoughts about coordination or alignment of research among the research teams. The core tool might be a common questionnaire used to survey individual cannabis

users enrolled in the projects. The Cannabis Use Disorder Identification Test (CUDIT), which is considered a generally accepted tool for early detection of problematic cannabis use (Adamson and Sellman 2003), might be used by several research teams.

Insights from exchanges with research teams currently reflecting on research designs for pilot trials show that one of the central questions from the parliamentary debate, regarding the effects of different retail models or systems, is reflected in discussions on the general orientation of future research. There are research teams with an interest in analyzing the effects of different retail models in a single investigation, meaning that there will be no restriction to specific retail outlets such as pharmacies or cannabis social clubs. Instead, potential dispensaries might be pharmacies, kiosks or vape stores. Other research teams think about restricting retail models to a single form, e.g. urban pharmacies or cannabis social clubs. International research indicates that state-run outlets are a promising alternative to commercial models and seem to be best suited for public health-oriented cannabis regulation (Kirst et al. 2015). With regard to regulation in other subject areas such as tobacco or alcohol, it can be seen that commercial models correspond most closely to the Swiss political culture and are also preferred in the political debate. Provided that the legal framework would allow to operate with state dispensaries, it might make sense to incorporate this type of dispensary in research designs for pilot trials as well, or at least explore the question of what role the state must play in dispensing cannabis to ensure public health objectives.

The preliminary conceptual considerations of the research teams are mostly aimed at gaining insights into the effects of legal dispensing of cannabis for recreational use on study participants' consumption behaviors and patterns (amount and type of use, use of other substances, and proportion of cannabis acquisition in the illegal market), and the associated health effects. These topics were also at the forefront of the political debate and are therefore seen as key priorities. Some research teams are also interested in gaining additional insights on socioeconomic aspects (e.g. work absenteeism), on the performance of consumers, on their social environment, and the drug market in a specific area, the protection of minors and the public order and safety. Another aspect raised during the exchanges with the research teams and very likely to be explored in future pilot trials is the impacts of different forms of regulation (e.g. price regulation or restrictions on product types) on the legal and illegal market.

Variation also exists in terms of which methods are expected to be used. The majority of research teams might work with quantitative online surveys to collect the relevant information from the participants. Some research teams are planning a more qualitative focus. Methodological approaches discussed were open, non-standardized in-depth interviews, focus groups or ethnographic observation phases. Some preliminary research designs also state that qualitative interviews should be conducted with youth workers, police, or residents in the vicinity of dispensaries, which might be a way to gain insights on the effects for public order and safety. Evidence on co-consumption of other substances such as alcohol or tobacco and the judicial handling of offenses and charges might also be obtained via online surveys. Another intention is to cover a comparatively large product range. Not only cannabis for smoking, but also as a vaping product might be distributed, as well as cannabis with different THC and CBD concentrations. There are also differences in terms of which groups are expected to be primary participants, i.e. the groups of cannabis users for which additional scientific findings are to be obtained (problem users/ heavy users, average users, etc.). Another adjusting screw is the tasks and functioning of the dispensaries, such as pharmacies. Dispensaries can take a rather passive role during the trials and primarily dispense cannabis according to the respective guidelines set out in the BetmPV. Alternatively, they might be entrusted with various responsibilities such as recruiting participants, purchasing and selling cannabis, as well as designing and implementing preventive measures.

### 5.3 Additional potential research topics and questions for pilot trials

This section discusses potential research questions and topics that could be explored as part of pilot trials. Primarily, these are topics and questions that have not yet been raised by research teams as part of ongoing reflections on potential pilot trials. One issue seems to be **online sales**. Scientific evidence on Switzerland would be needed on this particular sales channel as well. Recent experience from other countries shows that this channel has become more important, especially in the current pandemic. Before anything else, details whether the distribution of cannabis via an online channel is legally permitted at all would need to be examined. Art. 13 BetmPV stipulates that cannabis products may only be made available through sales outlets that have expertise and appropriately trained staff, as well as an adequate infrastructure, and ensure safe storage of the products.

In order to investigate the effects on the **drug market or public safety and order**, sophisticated research designs incorporating complex statistical methods are needed to identify causal effects. It would be conceivable to compare two cities or municipalities that are very similar in terms of potential confounding factors, preferably differing only in that treatment is provided in one city (legal dispensing of cannabis for recreational use to certain individuals) and not in the other. When all confounding factors are removed, the causal effect of the intervention could be estimated. A similar approach is the synthetic control method, which has been applied in an investigation to estimate the consequences of a policy intervention, more specifically a new tobacco legislation in California (Abadie et al. 2010). In the context of the impact on the drug market in a given area or on public safety and order, **involvement of the local population** might also be a way to gain additional insights. For example, residents in a municipality participating in pilot trials could be invited to assess the regulations being tested, and their consequences, by means of a survey.

With regard to international cannabis research, it seems particularly important to keep an eye on possible changes in alcohol consumption and **co-use of other substances** among participants of the pilot trials. Questions about co-consumption of alcohol and cannabis or changes in alcohol use, if not already included, can in our view be implemented into existing research designs/ questionnaires and might provide insights into the extent to which there are public health benefits or harms and how the illegal market is affected (see also Hall et al. 2019).
Additional information on specific **consumption behavior** could also be collected and analyzed in pilot trials, e.g. by means of additional items in a planned survey. The focus here is on the questions of which regulatory measures can be used to promote low-risk consumption and which measures are effective in increasing the consumption competence of consumers.

The question of the consequences of a legalization of cannabis on **youth use and the protection of minors** more generally might not be conclusively assessed with pilot trials under a strict prohibition of sales to minors. Some lessons may be drawn from the insights of non-minor consumption of cannabis, but whether they actually hold in reality is an open question. Insights on youth protection could possibly be gained by explicitly selecting study participants who live in the same household with adolescents (e.g., parents). Adolescents might even be interviewed or surveyed to gain insights on potential effects of legally dispensing cannabis for the social environment.

Further questions that can in principle be investigated within the framework of pilot trials are situated in the thematic block **processing and distribution** of our logic model. Additional insights on adequate and credible packaging and branding of cannabis products (see e.g. Hall et al. 2019) might be collected. First, this involves ensuring the quality of the product, i.e. the packaging must be designed in such a way that it guarantees a long-lasting high quality. Second, the packaging should contain warnings, THC levels and information on correct and reasonable consumption. Third, the presentation of the packaging

should not be particularly aimed at young people and thus thwart the protection of minors. These different elements can have a very concrete impact on consumers' choice of products. We would welcome experimental research (e.g. discrete choice experiments) in this area that looks at the impact of different product features on purchases by consumers of different age groups (Shi et al. 2019). Certain aspects could be included in surveys for the future pilot trials. An experimental research design for a pilot trial is also conceivable, in which different types of information and packaging are given to respective groups of participants. Since consumer preference is strongly dependent on the respective context or culture, insights from previous studies (e.g. Hammond 2019) in other countries can only be transferred to Switzerland to a limited extent. Different **product forms and variations** and how they affect the health of users are a topic that might also be incorporated in research designs for future pilot studies. Insights into the effects of different products can help to better advice consumers in the future and guide their consumption toward less harmful products.

# 6 Research questions for supplementary research

As described in the previous chapter, the framework for the pilot trials seem to be adequate to study issues surrounding consumption behavior and individual health. The trials have some limits because they primarily provide individual level data and are restricted in time and place. Some generalizations might however be made to the general population or specific target groups. Issues that pilot trials can only address to a very limited extent include the production, processing and distribution of cannabis products, public safety and public order, the protection of minors, and the use of revenues and taxes. These are broad potential topics for complementary research, outside of the framework of, but related to the pilot trials. The aim of this section is to outline the important topics and questions for complementary research.

## 6.1 Ongoing research supported by the FOPH

Before we begin, it is useful to briefly discuss ongoing research mandates commissioned or financially supported by the Federal Office of Public Health (FOPH) focusing on a variety of contextual aspects related to the pilot trials. Indeed, the FOPH has already mandated different research organizations with investigations as a complement to the pilot trials in Swiss cities. Table 5 shows ongoing projects, as well as the core questions investigated by them.

The commissioned projects thus cover certain research areas that cannot be investigated in the pilot trials. The survey conducted by Sotomo is directed towards the general population eligible to vote. It will generate knowledge on the general acceptance of regulatory options and attitudes towards legalization. This includes questions regarding who is allowed to produce and sell cannabis with substantial THC for recreational use, at what age cannabis can be consumed, where cannabis can be consumed, what quality standards apply, how cannabis can be advertised and taxed, what regulations apply to the taxation, and what accompanying measures would be important in the event of legalization.

The aim of the mandate given by the FOPH to Sucht Schweiz is to compile a literature review on the consequences of the legalization of cannabis in other countries. More specifically, the question is which regulatory measures concerning the recreational use of cannabis have already been evaluated in other contexts and what the findings are in terms of health, economic and societal consequences of the regulation (Schmidhauser and Zobel 2021). This mandate can be seen as a continuation and supplementation of the work of an earlier report on regulatory approaches and measures in countries that have already gained experience with the legalization of cannabis for recreational use (Zobel and Marthaler 2016). In general, it is noted that one must be extremely cautious in drawing conclusions based on past experience in other countries. A few findings are regarded as certain. Legalization contributes to a diversification of the product range, which also leads to an increase in cannabis-related intoxications due to a lack of consumption indications. The number of arrests decreases post-legalization. A legal market also seems to take over parts of the illegal market, but without causing it to disappear. Other potential impacts of legalization are categorized as either merely probable, or uncertain (Schmidhauser and Zobel 2021).

**Table 5: Ongoing or recently completed projects and insights**

| | Mandate holder | Research project | Insights |
|---|---|---|---|
| ongoing | Sotomo | General population survey on cannabis | - What is the general attitude towards a new regulation for cannabis?<br>- What regulatory options (e.g. age restrictions, restrictions of use in public, etc.) are accepted by the general Swiss population? |
| | Sucht Schweiz | Comparative analysis of evaluations of regulatory policies on cannabis in different countries | - In which countries is cannabis for recreational use legal and which regulations have been introduced?<br>- Which policies concerning the regulation of cannabis for recreational use have already been evaluated?<br>- What are the results of the evaluations in terms of health, social and economic consequences of regulation? |
| | University of Geneva & Rütter Soceco | Cannabis and the Swiss economy: social costs and economic effects | - What are the overall direct and indirect economic effects of different regulatory models?<br>- Will there be a substantial increase of tax income following legalization of cannabis?<br>- What is the economic potential of a legal cannabis market for Swiss producers and retailers?<br>- Could prevention and health protection measures be financed by additional tax revenues? |
| completed | IRM Basel[8] | Report THC-thresholds in road traffic. A literature analysis | - What are possible scenarios to adapt road regulations in case of legalization / decriminalization of cannabis consumption? |
| | ZHAW[9] | Comparison between the Good Agricultural and Collection Practices (GACP) of the EMA and the Canadian Good production practices guide for cannabis[10] | - Which cultivation and product standards best protect consumers?<br>- Which existing standards from other jurisdictions are suitable for Switzerland? |

The study by the University of Geneva and Rütter Soceco (sozioökonomische Forschung + Beratung)[11] on direct and indirect economic impacts can primarily generate knowledge in the thematic block of socioeconomic outcomes. More specifically, the economic impact of different regulatory models will be calculated and insights into respective impact mechanisms are expected. The research team is expected

[8] The full report can be found under: https://www.bag.admin.ch/dam/bag/de/dokumente/npp/forschungsberichte/forschungsberichte-cannabis/bericht_thc-grenzwerte_strassenverkehr.pdf.download.pdf/Bericht_THC-Grenzwerte_Strassenverkehr.pdf

[9] This mandate resulted in two publications. The first one can be found under: https://www.bag.admin.ch/dam/bag/en/dokumente/npp/cannabis/betm-pv-entwurf/bericht_vergleich_gacp-cppc.pdf.download.pdf/bericht_vergleich_gacp-cppc.pdf.

A second publication lists recommendations for Switzerland: https://www.bag.admin.ch/dam/bag/en/dokumente/npp/cannabis/betm-pv-entwurf/bericht_empfehlungen_produktequalitaet_cannabis.pdf.download.pdf/bericht_empfehlungen_produktequalit%C3%A4t_cannabis.pdf

[10]

[11] Contracting authorities are the FOPH, the Canton of Geneva, the Canton of Basel-Stadt, the cities of Zurich and Bern.

to calculate costs based on different regulatory scenarios. The study of IRM Basel on THC limits in road traffic can be located as research in the area of public order and safety. The results of the literature analysis, which have been available since the end of 2020, also provide insights into the negative public health consequences of the simultaneous consumption of alcohol and cannabis (co-consumption). Three variants for possible THC limits in whole blood for road traffic are proposed (Bucher et al. 2020). The ZHAW mandate on cultivation and product standards provides insights for the thematic block *production*.[12] In this mandate, the cultivation regulations of the European Medicines Agency and those in Canada are compared in order to derive recommendations that factor in the legal framework in Switzerland. It is recommended that the good agricultural and collection practices (GACP) be followed, a standard recognized by the authorities in Europe for the cultivation of plant material to be used as resource for pharmaceuticals or herbal health products. The GACP's primary objective is to ensure consumer safety by ensuring adequate and consistent quality of the plant material. The second part of the ZHAW mandate is to investigate how product quality is ensured with regard to active ingredient control and tolerances for active ingredient fluctuations, and how pesticide residues and other contaminants are regulated (Lardos 2021).
These projects are complementary to the cannabis pilot trials in that they focus on topics that cannot be investigated in the pilot trials. They nevertheless provide crucial evidence on relevant areas of the logic model (see section 3.2.4).

### 6.2 Additional research needs

Overall, the planned pilot trials and the mandates already commissioned or supported by the FOPH cover a significant portion of the issues and thematic blocks visualized in our logic model (see section 3.2.4). However, comparing this logic model and the research agenda covered by the pilot trials themselves as well as by the complementary mandates commissioned by the FOPH, it appears that additional research is needed mainly in the following areas: processing/distribution of cannabis products, use of revenues and taxes, consequences for public order and safety, and the protection of minors. In addition, research is needed on other specific topics such as the appropriate control structure, consumption behavior, or the status quo of cannabis policy. In the following, we will specify relevant research questions for each topic area in which additional research seems to be necessary. We conclude by discussing questions that go beyond our model and those that cover multiple subject areas within it.

In the thematic block **processing and distribution** potential insights on the impact of different product features on consumer choice can be gained through the implementation of respective survey items in surveys for pilot trials, as already discussed in section 5.3. However, it is also possible to investigate aspects related to product or packaging characteristics, acceptance of possible warnings, declarations and information detached from pilot trials and without actually dispensing cannabis products. Investigations can be short-term oriented. The advantage of investigating these questions outside the framework of pilot trials is that research teams would be less restricted, i.e. the requirements regarding packaging and product information (see BetmPV Art. 11) would not apply. This could possibly lead to a stronger focus on actually effective regulations of packaging and product information under more realistic circumstances.

The **use of revenues and taxes** seems to be a field in which additional research is needed. The use of the resources is, of course, highly dependent on pricing. The price level should ensure a certain competitiveness with the illegal market, without encouraging consumption due to the low price. In states where cannabis has been legalized in recent years, there are different approaches to using the

[12] For an international perspective on production and regulation regarding cultivation, see e.g. Kilmer et al. (2013).

revenues and taxes. A substantial portion of the revenue often goes to the implementation of regulatory measures or to the regulatory authorities themselves. However, it is also possible to establish a specific distribution key for tax revenues from the outset. Resources can be made available for prevention and education campaigns, for research projects on cannabis, or they can flow into certain policy areas, e.g. the education, health, or police system (Transform Drug Policy Foundation 2016: 252ff.). The research questions to be examined in this thematic block must take appropriate account of Switzerland's federal structure.

- What pricing model makes sense (minimum price, taxation regarding THC level or weight, etc.)?
- How should cannabis tax revenues be used?
- Could prevention and health protection measures be financed by the additional tax revenues?
- Which distribution key makes the most sense for Switzerland?

The question of how the money will be used naturally presupposes that cannabis products will be taxed, and that the state will be able to generate revenue as a result. Numerous associated questions about the amount of the sales price or taxation are also still open at this point. The mandate by the University of Geneva and the consulting company Rütter Soceco will not be able to provide in-depth answers in this regard. Additional research on the tax consequences of a possible legalization should be carried out (e.g. Irvine and Light 2020).

In the thematic block **public order and safety**, there are many research questions that need to be investigated by complementary studies. Respective studies would have to be designed for the long term. A first potential issue for a more in-depth investigation in this thematic block could be the consequences of legalization for the **illegal market**. Can the illegal market be replaced through legalization of cannabis? These consequences cannot be assessed conclusively due to the comparatively short time research projects are usually covering and the long process before a stable market equilibrium is reached. In addition, researching the illegal market presents a methodological challenge making it difficult to obtain reliable numbers (see also Zobel et al. 2020). Pilot trials on the controlled delivery of cannabis can hardly make far-reaching statements about the effects on the illegal market in Switzerland. The group of users who are part of the investigations (a maximum of 5000 participants) might be too small to influence the market equilibrium nationally. A long time horizon and a larger number of participants would be a prerequisite for obtaining sound findings on the impact on public order and safety. Economic simulations based on findings restricted to the local level, or insights from other contexts or policy fields, could help to advance knowledge under current conditions. It seems certain that legalization will incrementally erode the illegal market (Schmidhauser and Zobel 2021). In this context, future research should also address the question of which factors have an effect on the speed with which a legal market can replace an illegal market in the future.
A second point refers to potentially **problematic consequences of cannabis use in public space**. An effective regulation on cannabis must determine to which extent cannabis consumption in public space is appropriate for a minimization of social and health costs. It is important to consider that eventually, there might be a substantial range of cannabis products available (e.g. vaping products, candies, oils, drinks, etc.). A public health oriented regulation of cannabis consumption in public space must take this product variety adequately into account, thereby guaranteeing that existing regulations cannot be bypassed by product innovations. In the case of indoor consumption, air quality and passive smoking can endanger health, while public consumption outdoors contributes to normalization and trivialization of cannabis consumption. Both arguments need to be considered. In this context, **risk perception of cannabis** seems to be of central importance. The public presence of cannabis and cannabis users shapes what is regarded as problematic use via the risk perception of the population. Therefore, additional research on risk perception of cannabis in the general population is needed.

The **protection of minors** is another thematic block on which further research is needed. Since the distribution of cannabis to minors is generally prohibited in the context of the planned pilot trials and scientific findings can therefore only be expected at the margins, other research designs and methods must be chosen. We see online surveys as a promising method for gaining insights. Applying quasi-experimental online surveys under realistic conditions to investigate how different product characteristics (e.g., price, potency, warning labels) affect adolescents' choice of cannabis products (see Shi et al. 2019 for a similar attempt) might be a viable option. In order to be able to ensure adequate protection of minors, prevention work must also start early, before profit-oriented companies enter the scene and try to influence the legislation to suit their commercial goals (see also Rosenbaum 2016). In the context of programs aiming to prevent underage cannabis use and educate young people on cannabis, the question of funding is particularly important. In many jurisdictions, additional resources flow into prevention campaigns following legalization (Pardo 2014). However, evidence from Colorado indicates that appropriate action should be taken prior to legalization from a public health perspective and should not be dependent on post-legalization revenue/taxes (Subritzky et al. 2019). Reflection is also needed on how any regulatory interventions in the area of **youth prevention** can adequately address parents, family structures, and trusted caregivers who have a strong influence on adolescent users (Faggiano et al. 2014). As outlined in section 3.2.1, scientific evidence suggests that peer-group or family-based prevention is more effective than large-scale public campaigns. There is a need for research on the extent to which prevention campaigns targeting young people via social media are a more promising alternative (see also Boumparis et al. 2019). In addition, research is needed on how **restrictions of advertisement and promotion** can be designed. The effects of advertising cannot be investigated within the framework of the pilot trials, as there is a strict ban on advertising (see BetmPV Art. 12). However, quasi-experimental designs would be conceivable in order to investigate how different advertising messages and channels affect potential use (see also Moreno et al. 2018). Advertising messages for different product forms could also be taken into account (e.g. flowers, edibles, etc.).

Another central aspect, which should be investigated further in complementary investigations, crosses several thematic blocks in the logic model outlined before (see 3.2.3). More specifically, it concerns the topic of **appropriate state control, control bodies and control measures**. A central question is how a regulatory authority responsible for the supervision of regulatory measures can and should be designed in order to match the specific characteristics of the Swiss context. Which types of actors should be involved in regulation must also be clarified. This could include, for example, actors from the field of public health, but also economic actors acting on behalf of the state. In Uruguay for example, a rather strong new public agency, the Institute for regulation and control of cannabis, was founded and given the responsibility to effect the regulation (van Kempen and Fedorova 2019: 189). The appropriate requirements for licenses for the cultivation, production, processing, or sale, of cannabis must be determined such that they best protect public health. Furthermore, it must be clarified whether a concentration of power in the hand of a few actors can be prevented by the interdiction to simultaneously be a producer, supplier and retailer (see also Zobel and Marthaler 2016).

With regard to consumption behavior, there is great research potential in the area of regulatory measures to **support consumers in pursuing a non-problematic consumption behavior** and integrating consumption into their everyday lives without negative consequences. Which structural measures contribute to an informed behavioral choice and which specifications provisions regarding safe consumption (e.g. “safer use guidelines” and their specific design) are appropriate? To our knowledge, there is so far no known suitable instrument on how to adequately capture risk knowledge, low-risk consumption knowledge and consumption competence. Various measures regarding education, sensitization and product information have to be implemented in the pilot trials (see

BetmPV). However, it can be assumed that the effects of these measures on consumer behavior can only be studied marginally during the pilot trials.

**Research on the status quo** is needed to accompany the pilot phase but also with a view to possible future regulatory changes. Reliable data on the current situation is a prerequisite for any evidence-based statements about the effects of policy changes and interventions. This point applies to most of the thematic blocks discussed in this report. Experience from other countries also indicates that data collection must begin at an early stage and continue over time (Jesseman 2019; Dills et al. 2021). In particular, early data collection and a long-term perspective might be warranted to answer the questions of whether legalization or decriminalization lead to an increase in the number of invalidity (IV) cases and hospitalizations, as well as to an increase of physical and mental illnesses. For this purpose, the status quo must also be researched.

The consequences of legalization for public health, safety, and also social equity, are highly dependent on the specific implementation of the policies, on which actors are involved and on how they use their discretionary power in the implementation phase (see also Kilmer 2019). There is a significant discrepancy between formal cannabis policies and how they are actually implemented (Loo et al. 2003). **Policy implementation research** from a political science and/or a public administration perspective is therefore important and should closely accompany any future policy changes. It might indeed be valuable to research the implementation of certain measures already in pilot trials (e.g. how do different dispensaries implement the specifications of the project leader?). One of the research questions could be how the various public, private or non-profit actors coordinate most effectively in the context of cannabis governance, also across multiple federal levels. Surveys and interviews of people involved in the implementation of current and future cannabis policies (e.g. judges, police officers, etc.) might provide new insights in this regard.

There is, lastly, a need to examine and start reflections on the question of what happens to **previous criminal sentences** related to the cultivation, use, or sale of cannabis before legalization (see also Herzig et al. 2019). Even if no legal changes are expected in this regard during the ten-year experimentation phase, the issue should be addressed early in order to be ready at the time of potential future legislative changes. The concrete details of the regulation are crucial in this case. Are criminal records automatically expunged, or must an application for record suspension be filed? What are the costs involved and what is the bureaucratic process required to do so? Various approaches have been taken in other countries, and it is at this stage not possible to determine which are the most promising. Looking at Canada, some authors argue that non-automated record suspension creates inequities because some individuals cannot afford to apply for expungement due to the cost, lack of resources, or the complicated bureaucratic process (McAleese 2019).[13] In this context, it is also important to point out that experience from other jurisdictions underlines the importance of issues of equity. They need to be reflected upon in advance in the context of the handling of earlier sentences, but also in the implementation of other regulatory measures. It should be anticipated that not all segments of the population will be affected by regulatory measures to the same extent and that adverse effects may arise in some cases.
To identify further research needs specifically adapted to the Swiss context, it could be useful to seek an exchange with consumers, their relatives or family members in the future. This was not included in the framework of our mandate. Participatory involvement of directly affected population groups in the elaboration of future research priorities might be a promising way and could contribute to an evidence-base directly relevant for policymakers.

[13] The Canadian Government opted for a non-automated record suspension instead of a full expungement of minor cannabis-related offenses (see McAleese 2019).

# 7 Research coordination and funding

In the previous sections, we identified a range of topics and questions for research that should be investigated in the context of the cannabis pilot trials as they unfold, and that are needed for an evidence-based choice of policy options for future cannabis regulation in Switzerland. In this chapter of the report, we discuss options of research coordination and funding and formulate some recommendations.

## 7.1 Models of research funding and coordination

In general, three different models of research funding and coordination can be distinguished (Braun 1998), in the sense of ideal-typical funding schemes that differ in terms of their influence on what is investigated and by whom (see also Frey and Kübler 2011).

1. *Political funding schemes:* these immediately serve the interests of a ministry and are obliged to respond to precise, pressing problems raised by government. In order to find practical and applicable solutions in a given policy field, these funding schemes are aimed at creating research communities involving established, but also upcoming and unconventional scientists from various disciplines.
2. *Science-based funding schemes*: they serve the interest of all disciplines of science and aim to foster the most promising scientific agendas for knowledge advancement judged according to criteria proper to the various scientific disciplines. Science-based funding schemes tend to result in a strong disciplinary orientation, promote mainstream research, and bear the risk of disjointed and incoherent research efforts, where various scientists tackle a problem completely independently from each other. Investigation or discussion of policy-related questions or issues may occur, but are not a priority.
3. *Strategic funding schemes*: they promote research in a particular problem area, and have the mission of promoting all promising research paths in the respective domain, as well as responding to problems raised by the scientific community, the public, or politicians. Strategic funding schemes promote both disciplinary research and the development of strategies to apply basic research results. They often foster a fruitful combination of both reputed scientists and more unconventional investigators.

## 7.2 Political research funding: looking back on a past example in Swiss substance research

The legal basis for the cannabis pilot trials precludes direct funding by the federal government. Hence, a *political funding scheme* is clearly ruled out on the national level.

Nevertheless, it is instructive to look back on an example of a political funding scheme for research and coordination in the field of substance research in Switzerland, namely the projects for the medical prescription of heroin (*Heroingestützte Behandlung – HeGeBe)* in the 1990ies (Uchtenhagen et al. 2000). It is still widely regarded as an instance of a successful and internationally renowned project for evidence-based policy-making in the field of illegal drugs and addiction (Uchtenhagen 2010: 29ff.). In response to worsening conditions of a rising number of heroin addicts in Swiss cities, medical prescription of heroin to heavily addicted users was introduced by the Swiss federal government in the form of scientific trials in 1992 (Bundesrat 1992). While cantons, municipalities and private organizations were responsible for the implementation of the trials, the federal government provided the financial resources for their scientific evaluation. All trials had to be approved and supervised by the Federal Office of Public Health FOPH. The FOPH also awarded the mandates for the scientific evaluation and supervised the research activity. Subsequently, the "Swiss Program for a Medical Prescription of Narcotics

(PROVE)" started in 1994, and continued until 1999 (HeGeBe 2002). The treatment proved to be successful in improving patients' mental and physical health as well as their living situation, and in significantly reducing drug-related crime. Given its success, heroin-based treatment became a routine medical procedure covered by mandatory health insurance (Uchtenhagen 2010: 34). The trials and the numerous publications based on the research related to them drew worldwide attention with researchers and policy makers alike.

PROVE was a rather centralized program in terms of research organization. As stipulated in the federal government's 1992 decision, a research group under the leadership of Professor Ambros Uchtenhagen from the Zurich-based Swiss Research Institute for Addiction (nowadays Swiss Research Institute for Public Health and Addiction) was mandated to define and implement the overall integrated research plan. PROVE was designed as a cohort study in 17 treatment facilities located across several Swiss cities and included 1'146 patients (Gschwend 2004: 9ff.). Data was gathered using a range of standardized research instruments according to the research protocol. All data was collected in standardized format and centrally stored. Educational events prior to the start of the trials ensured that the treatment facility staff were familiar with the research goals and the use of the research instruments.

Coordination of the PROVE trials worked rather smoothly. Initial reluctance of doctors and clinics to participate in research and data collection could be overcome as all trials needed the FOPH's approval, which was only given for trials that included participation in data collection using a common standardized questionnaire for patients. This patient questionnaire was the main common data-gathering tool throughout all trials. It was based on the international state of the art on the surveying of heroin users, recommended by the World Health Organization WHO. The same questionnaire had been previously used in methadone-based substitution programs and in abstinence therapy, and was therefore well established in the field. Regular conferences and meetings of the involved researchers to discuss new developments and questions further facilitated coordination. The high number of publications resulting from PROVE is an indicator for its high integration both in terms of its substantial agenda and the resulting researcher network.

Three main factors account for the success of research coordination in the case of PROVE. First, comprehensive funding by the FOPH. Second, a pre-existing integrated research community whose members already shared a consensus on the central questions, processes and tools. Third, the leading investigators were very well known and undisputed experts in the field of addiction research.

### 7.3 The scenario emerging: decentralized research funding and self-coordination

Given the legal basis of the cannabis pilot trials and the conditions stipulated there for funding of scientific research and coordination, the scenario that emerges is one characterized by a high degree of decentralization. The role of the federal government is limited to passing legislation on experimental research on cannabis and authorizing research institutions to fund and undertake such research with other partner organizations or institutions. The federal government evaluates and approves research projects and bundles research results, but does not play an active role in their production. Individual researchers therefore carry the responsibility to find funding for their projects and to coordinate with other researchers. Within the boundaries of the trial legislation, they are free in their choice of research questions, research scope, method, and operationalization, including data-gathering tools. In contrast to the PROVE example discussed above, where funding and coordination of research was centralized and strongly steered by the FOPH, the emerging scenario for the cannabis pilot trials is one where funding and coordination of research is organized by researchers involved in the individual projects themselves – in other words: a *science-based funding scheme*.

*A science-based funding scheme* is, in principle, open to any researcher interested in getting involved in the cannabis pilot projects, under the condition that they are able to organize the funding for this endeavor. In Switzerland, there are several potential donors for science-based funding.

The Swiss National Science Foundation (SNSF) is the most important independent research funding agency in Switzerland. The SNSF features many different funding instruments, which are open to researchers seeking to investigate a research topic of their choice – and which are, hence, potentially suitable for funding research related to cannabis regulation in general, or cannabis pilot trials in particular. Indeed, the SNSF, in 2017, approved the SCRIPT-project by the University of Bern, aiming to investigate the implications of dispensing cannabis for non-medical purposes to pharmacies (the project was, however, not approved by the FOPH at that time). Besides the possibility to submit proposals for individual research projects in all disciplines, further thematically open funding instruments include programs such as the National Centres of Competence in Research (aimed at established researchers who wish to pursue a long term research program on a theme of strategic importance), Sinergia (promoting interdisciplinary collaboration of two to four research groups that propose breakthrough research), several funding schemes intended to foster international collaboration of research groups, as well as career funding schemes focused on projects proposed by individual researchers. They are all characterized by a science-based rationale: topics are defined by individual researchers, aims are mainly scientific in nature, and requests for funding are systematically submitted to international peer-review. High competition in these funding schemes generally ensures high scientific quality of the research funded. However, due to low acceptance rates, researchers are cautious in their decisions to invest time and energy into submitting proposals to these funding schemes.

Besides the SNSF, a large number of other independent foundations play a role in funding scientific research in Switzerland. Funding schemes by independent foundations are generally open to proposals from individual researchers or research institutions. While individual foundations usually focus on specific themes or research fields, together, they provide a wide range of topics on which research can be funded. However, it is as yet unclear to what extent such foundation-based funding schemes would be suitable to research related to cannabis regulation or, more specifically, the cannabis pilot trials.

In the field of substance use and addiction, important science-based funding instruments are related to the Tobacco Control Fund (*Tabakpräventionsfonds*), as well as the Alcohol Prevention Fund (*Alkoholpräventionsfonds)*, to which researchers can submit requests for funding of projects that investigate the prevention of use, or at risk use. While it is unclear whether research focusing on questions related to cannabis regulation or the cannabis pilot trials could be submitted to these funds, they are of interest regarding their organizational and financial setup. Indeed, both funds are alimented through federal sales taxes: the Tobacco Control Fund is alimented mainly by a tax on cigarettes (0.026 CHF per cigarette packet sold), the Alcohol Prevention Fund is alimented by the revenue of the federal alcohol tax. As stipulated by the Federal Act on Tobacco Taxation (*Tabaksteuergesetz*) and the Swiss Alcohol Act (*Alkoholgesetz)*, these taxes are collected by the federal government, who is also responsible for the redistribution of the funds and, hence, for the approval of research proposals submitted for funding. For this task it involves independent and permanent commissions of experts who issue recommendations. It is important to note that, while producers and retailers of tobacco and alcohol products are involved in collecting the tax perceived by the federal government, the legal and organizational setup of both the Tobacco Control Fund and the Alcohol Prevention Fund ban producers and retailers from involvement in the definition of research agendas or the approval of research projects. These precautions have been taken to prevent conflicts of interests between production and retail on the one hand, and research funding and researchers on the other hand. Indeed, in the field of substance use and addiction, such conflicts of interests are a particularly sensitive issue. While this issue is well-known in the field of legal drugs, it has only recently emerged with respect to cannabis. The decriminalization of production and sale of cannabis, even under relatively strict conditions, has turned cannabis producers and retailers into stakeholders who can now legally claim and pursue their interests.

It is, however, understood that cooperation with and/or funding by industry partners creates a high potential for conflicts of interest and carries a significant reputational risks for scientists – as is well-known from the fields of tobacco and alcohol. A clear assertion of independence is paramount, all the more since public and media scrutiny for the cannabis trial and research can be expected to be intense. Conflicts of interests therefore bear serious risks of credibility of research results in this field. Hence, it is important to design the organizational set-up of funding research related to cannabis in a way that precludes conflicts of interests (see also box).

**Box: Avoiding conflict of interests in cannabis-related research funding**

The following principles may serve as guidance for avoiding conflicts of interest:

- Full transparency on research funding must be given at all times.
- Submission of proposals and funding decisions on cannabis-related research must be fully independent from cannabis producers or retailers, or their representatives.
- Direct funding of cannabis-related research by producers or retailers must be avoided.
- Indirect funding (e.g. through levies on cannabis products) should be collected nationwide, ideally as a governmental tax.
- Data ownership of cannabis-related research must lie with researchers.
- Researchers involved in cannabis-related research must be free to publish their results.
- Cannabis-related research must have received ethical clearance, and researchers must comply with relevant research ethics guidelines.

Research in science-based funding schemes is researcher-driven, and so is research coordination. Efforts of coordination and integration of research, as well as exchange of data and research results therefore typically follows researchers' needs, as well as rules and practice established in their field or discipline. The principles of so-called Open Science emphasize the transparency of the research process, public availability of data, as well as dissemination of results. The open science movement has been gaining momentum in Switzerland in recent years, especially in the science, technology, engineering and mathematics disciplines. The emerging scenario of a science-based funding of the cannabis pilot trials will also entail substantial and continued efforts of researcher self-coordination, notably with respect to the research instruments used to collect data on trial participants and their behavior. This can be expected to ensure standardization of data collection across the trials, which is important to the comparability of results and findings.

In sum, the emerging scenario suggests that, in scientific terms, a favorable outcome is likely. This mainly depends on an integrated, generally renowned research community jointly using standardized and validated research instruments, and avoiding conflict of interest with the cannabis industry.

### 7.4 Looking ahead: decentralized funding and strong coordination

Let us now sketch a scenario characterized by decentralized funding and strong coordination. This scenario tries to minimize the challenges and risks of the previous one. In this scenario, research teams develop and conduct individual projects in a variety of locations, while also coordinating intensely. Such coordination can vary in form and degree, and range from a joint research platform or a project alliance to a unified multi-site or multi-centered study.

We see realistic potential for stronger coordination in mainly three areas. First, a basic condition for measurement comparability is the **determination of a standard cannabis unit size**. Cannabis products used in the trials should be produced and their potency clearly labeled using this common measure, in

addition to the declaration mandated by the government ordinance (BetmPV Art. 11) (see also Hindocha et al. 2018; Prince et al. 2020). Second, a **common core questionnaire** for study participants to be used in all trials would not only make sense to allow comparability of results across trials (see also Geissler et al. 2020), but also to coordinate research agendas across the different trials. While some trials might not primarily focus on individual consumers, they are still founded on administering cannabis to individuals. The more participants are included and evaluated, the more data is generated, and the better the reliability and validity of research results will be. Any chance to survey study participants should therefore be used. Third, a **common platform for data pooling and sharing**, relying on a high quality, user friendly and safe database would facilitate exchange and cooperation between different research teams and enhance the global significance of the results. Such a database will make raw data and unpublished study results available to all research teams involved in cannabis trials, while at the same time ensuring the protection of participants' data. Such data should encompass both questionnaire answers and measurement results obtained in the individual projects.

Development and use of all three methodological and coordination tools rely on a well-connected research community. Regular meetings of the principal investigators and their core teams facilitate such connections. We do not see potential for a fully-fledged multi-site or multi-center study at the current stage, as some planned pilot trials are already advanced in their development and pursue a variety of research questions. This variety is indeed valuable to enable broad insights. However, such a multi-site or multi-center study might be developed at a later stage based on the projects currently under preparation, and additional future studies. A multi-site study offers several advantages over single-site studies, including the use of synergies, greater generalizability of results also due to sufficient statistical power, or the possibility of quasi-experimental comparisons. While these three elements of coordination might emerge as a result of researcher-driven self-coordination, we think that both setting up and strength of coordination would benefit substantially from support by the FOPH. Indeed, the FOPH could provide funding for the development and use of these coordination tools as well as for regular meetings, workshops and conferences to facilitate communication and strengthen exchange across research groups. It is to be noted that support by the FOPH for research coordination does not jeopardize and is therefore compatible with the science-based funding strategy currently pursued by research groups involved in the cannabis pilot trials.

Given the FOPH's limited resources and legal discretion for funding and coordinating research in the field of cannabis, the overall integration of the research agenda would strongly benefit from additional means and resources, as would the likeliness that the topics defined in the agenda be comprehensively covered. This would require, however, turning towards the third type of funding schemes, namely a *strategic funding scheme*, explicitly geared towards promoting research in the field of cannabis. The obvious instrument for such a strategic funding-scheme exists in the form of the SNSF's National Research Programs (NRPs). These are programs that "embrace research projects that contribute to solving the key problems of today".[14] Federal offices, research organizations, research groups or individuals can propose topics to the State Secretariat for Education, Research and Innovation (SERI). After final selection of topics by the Federal Council, these are then referred to the SNSF and investigated with an NRP. NRPs are a strategic funding scheme precisely in that they explicitly promote research in a specific problem area the government considers as politically relevant. At the same time, disciplinary openness, systematic peer review and high competition ensure that research implemented within NRPs is usually of high quality and contributes to the advancement of knowledge in the field. An NRP would obviously be an appropriate funding scheme to further high quality and integrated scientific research in the field. If expedient, the focus of such a NRP might be expanded to issues surrounding the use of other substances and addiction more generally.

[14] See www.snf.ch.

# 8 Conclusion

The guiding question in this report was which regulatory conditions can effectively minimize the social and health costs of cannabis consumption, as the public health perspective is at the forefront of debates on cannabis regulation in Switzerland. The three most important research fields were derived based on this overarching purpose, namely the minimization of health and social harms of use, the improvement of public safety and order and the establishment of governance over a safe and responsible supply chain. Reflections fed into the development of a comprehensive logic model of cannabis regulation validated by the FOPH and an advisory group. In this model, the broad range of possible regulatory options is pointed out and related to the key desired impacts.

Prioritization of the research questions, derived from international discourse, was based on objective criteria such as the current political debate in Switzerland and the interests, values and concerns represented therein by different stakeholders as well as evidence from research abroad. Nevertheless, priority order still lies in the eye of the beholder at least to some extent. The four priority fields correspond to the impact dimensions from the logic model. In light of the ongoing planning of different pilot trials with cannabis, it is important to learn from research evidence and experience about the legalization of cannabis for non-medical use and its health, social, economic and public safety impacts. Taking the time and making a proactive investments is necessary for a strong and comprehensive regulatory framework.

The first of the priority areas identified is the promotion of individual and public health. The national addiction strategy with its four-pillar model enjoys large support along the entire political spectrum. Derived from the overarching goals of the National Strategy on Addiction and the corresponding legislative foundations, and in conjunction with findings from international research, various research priorities in the field of public health have been derived in four different areas. These areas are the prevention of addictive disorders including the question of how low-risk consumption can be facilitated, providing addicted individuals with the necessary help and treatment, mitigating social harms and damage to health, and reducing the negative impacts on society. An analysis of how the various regulation options affect not only the individual person and his or her behavior, but also the overarching social, economic, and cultural framework seems to be crucial in order to gain additional knowledge about how to create a favorable legislation.

The second priority research area is the promotion of public order and the reduction of criminality. Although this is not the main driver for possible legislative changes in Switzerland, this goal is repeatedly referred to in the political debate. Legalization is expected to increase security and reduce the illegal market. As the international workshop showed, there is only little reliable evidence to draw on here, as well. Long-term and large-scale studies on the functioning of illegal markets or the behavior of criminal groups or organizations would be necessary. Additional insights on criminal activities including effects on the illegal market, public order and policing, police organization and law enforcement, including the cooperation of different stakeholders also in the implementation phase, are of particular importance for Switzerland.

The third priority area is the protection of minors. At the moment, the findings of international research are still rather modest and existing data remains unclear in this area. However, cannabis use among Swiss adolescents is comparatively high and this is also a frequently recurring topic in the political debate. Not only would a blueprint for an ideal education and prevention campaign need to be developed, but also the possibilities would have to be explored as to which age limits for acquisition and consumption prevent young people from being pushed into the uncontrolled illegal market. It also seems important to ask to what extent the legalization of cannabis contributes to a trivialization of its

use among young people and whether there is a shift away from alcohol use (substitution) or a joint use of both substances, which would very likely be associated with additional negative effects on public health. The existing pillars for an effective protection of minors with regard to drug use, namely the legal regulation to protect minors ("Gesetzlicher Jugendschutz"), promotion of youth and prevention ("Jugendförderung") and youth support ("Jugendhilfe") must be adequately taken into account.

The fourth priority area is defined as the increase of prosperity, social justice and equality. Legalizing access to cannabis should not only take profits away from criminals, but also offers an opportunity for a new industry. Since the boom of cannabis with low THC and high CBD content in Switzerland, if not already before, profit-oriented players have become influential in the cannabis market. A strong position of profit-oriented players in the cannabis market is hardly compatible with public health-oriented regulation. Therefore, there is a compelling need for research that addresses the question of how an effective economic governance over the supply chain can be established and what the consequences of regulatory decisions regarding production, distribution and consumption actually are. The pivotal question seems to be how regulatory oversight of the whole or parts of the supply chain can be established in an efficient, accountable and transparent way. In addition, international debates on cannabis legalization point out that it is important not to lose sight of the consequences of various regulations in terms of social justice and equity.

Various relevant insights can be gained through future pilot trials. The legal framework for pilot trials is set out in the Ordinance on Pilot Trials under the Narcotics Act (BetmPV) of 2021. Several research teams are currently elaborating research designs for future pilot trials. There are considerations about research coordination in the context of developing a common questionnaire for the participants. Research teams intend to work with different types of dispensaries. Considerations of the research teams so far are predominantly related to health aspects and consumption behavior. However, socioeconomic aspects and possible effects on public safety in the vicinity of dispensaries are also being addressed in some cases. Additionally, there are aspirations to investigate pricing, effects of different products and co-consumption of other substances. Potential research priorities for future pilot trials are the following. One priority is to study the drug market in a given area or the impact on public order and safety. This could be done via a comparison of similar cities with the support of statistical methods allowing the estimation of causal effects. Questions about co-use of other substances should be considered in interviews or surveys of participants. The protection of minors could be investigated by explicitly selecting study participants who live together with minors and interview them as well. It can also be investigated to what extent different product formats and variations have an impact on the health of the study participants, which product features particularly appeal to them, which regulatory measures can promote lower risk consumption and what the effects of an online sales channel are, if actually legally permitted.

The planned pilot trials and the mandates already commissioned or supported by the FOPH cover a significant portion of the issues and thematic blocks visualized in our logic model. Additional research needs are identified in the following areas: processing/distribution of cannabis products, use of revenues and taxes, consequences for public order and safety, and protection of minors. Research is also needed on other specific issues such as the appropriate control structure and approaches to support consumers in pursuing a non-problematic consumption behavior. In addition, research across several areas on the status quo is necessary in order to be able to assess the effects of various regulations in the future. Research is furthermore needed in the area of policy implementation, as there is often a relatively large discrepancy between formal policies and their implementation. Comparative research is also needed on the advantages and disadvantages of the various regulatory options in the middle ground between decriminalization and legalization.

For the cannabis pilot trials, the scenario of decentralized research funding and self-coordination is emerging as a realistic viable path. The federal government evaluates and approves research projects and collects the results, but plays no active role in production or funding. There are several possible donors in Switzerland for the financing of such a science-based funding scheme. The SNSF is certainly the most important independent agency for research funding. Besides the possibility to submit individual applications for single projects, there are National Centres of Competence in Research for established researchers with long-term research programs, Sinergia for interdisciplinary research of several research teams and various instruments to enable international research collaborations. Several independent foundations also provide financial support for scientific projects. In addition, funds are known from the tobacco and alcohol sector that also support research. The potential of conflicts of interest is a known problem in this area. Independence from possible industrial interests and preventing conflicts of interest is thus central for future cannabis research funding and can be strengthened by following some central principles. It is also conceivable that researcher-driven research coordination be inspired by Open Science principles.

We currently see a realistic chance for stronger coordination mainly in three areas: the determination of a standard cannabis unit size, the development of a common core questionnaire for the participants, and the creation of a common platform for data pooling and sharing, in which results and raw data are made accessible. Coordination is strongly dependent on a well-connected research community and currently we do not see a multi-site or multi-center study as a realistic option. Stronger support from the FOPH including funding for research coordination could be helpful. The obvious instrument for a more strategically oriented funding scheme would be the SNSF's National Research Programs (NRPs). NRPs are a strategic funding scheme precisely in that they explicitly promote research in a specific problem area the government considers politically relevant. While a focus on cannabis might seem narrow, an NRP on the topic of substance use and addiction more generally could provide for an appropriate coverage of the relevant questions of the cannabis-research agenda.

Finally, it is important to point out some limitations of this report. Obtaining an adequate overview of the current state of research in cannabis regulation in a relatively short period of time was challenging. By limiting the review to current English-language literature reviews and meta-analyses complemented with selected additional publications, a pragmatic strategy was pursued. By doing so, we might have missed further potentially relevant older or other-language literature. Furthermore, a pragmatic approach had to be taken in the composition of the advisory board, i.e. not all relevant perspectives were represented. The absence of toxicologists and health economists who could have contributed their expertise should be noted, for instance. Similarly, no provision was made for the participation of cannabis users and their relatives in the development of the research agenda. They, being directly affected, could in particular provide relevant inputs on the problems of the current legislation.[15] These limitations need to be adequately addressed in the further process.

[15] A team of researchers at the University of St. Gallen is currently working on a research agenda for cannabis research in Switzerland that takes greater account of consumers and their embeddedness in a social environment.

# 9 Recommendations on coordination and funding of research

Based on the considerations discussed in the previous chapters regarding the existing research gaps in cannabis research, the planned pilot trials in Swiss cities, experiences with the regulation of other substances, and the current political debate on cannabis in Switzerland, recommendations concerning methodology, coordination and funding of research are derived in the following. In the first section, our recommendations focus on the development of a research methodology across projects, the second section concerns the coordination of research projects (pilot studies) and the third section then relates to the funding of future cannabis research.

### 9.1 Development of a cross-project research methodology

1. In international research, a standardized core questionnaire is sometimes used, to which modules can optionally be added to address the specific conditions in the relevant country or region. By analogy, we recommend the development of a core questionnaire for Switzerland with supplementary modules that take greater account of the situation of the drug market in a particular area, for instance.

2. While some pilot trials appear to be using similar questions and items, a common set of questions with core items does not exist so far. We recommend that the FOPH contributes to a cross-project research methodology by supporting researchers' endeavors towards a common questionnaire or some agreed-upon core questions.

3. We recommend the determination of a standard cannabis unit size, a common core questionnaire for study participants and a common platform for data pooling and sharing as steps towards a cross-project research methodology.

### 9.2 Coordination of research projects (pilot trials)

4. Public and media scrutiny for the cannabis pilot trials and research can be expected to be intense. We therefore recommend that researchers coordinate in developing a sound public and political communication strategy.

5. Besides the commonly-discussed alternatives, prohibition and the standard commercial model, theoretically there are many middle-ground options of cannabis regulation, which are rarely implemented in practice. We therefore recommend that more research be conducted in Switzerland on these middle ground options, which are still little researched internationally. These seem to have the potential to significantly reduce health and social costs.

6. Within the framework of the pilot trials, the FOPH performs various functions and is first and foremost an authorization and control body. Conflicts of interest are inevitable, and we therefore recommend a clarification of the FOPH's role in order to better support pilot trials in the future.

### 9.3 Research funding

7. A science-based funding scheme or a strategic funding scheme via SNSF grants might be viable options for research funding, while the legal basis precludes direct funding by the federal government. In order to increase the chances of funding applications, we recommend greater cooperation with international experts to identify relevant research gaps and ensure international relevance.

8. The Alcohol and Tobacco Prevention Funds, with their organizational and financial setups, represent interesting funding vehicles to which stakeholders interested in evidence-based research for the purpose of policy making should look.

9. To ensure the independence of research and its credibility and to prevent undue industry influence on research activities, researchers should adhere to some guiding principles for avoiding conflicts of interest in cannabis-related research funding (e.g. no industry influence on funding decisions, freedom to publish research results).

10. Independent foundations could play a critical role in funding pilot studies, provided the foundation's purpose is met. Coordination in this area (e.g. a central consulting office for the funding of cannabis research) could support the various research teams in seeking financial contributions from foundations and other actors.

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# Appendix

**Agenda of the advisory board meeting**

University of Zurich[UZH]

**Institut für Politikwissenschaft**

Universität Zürich
Institut für Politikwissenschaft
Affolternstrasse 56 CH-8050 Zürich
www.ipz.uzh.ch

**Treffen Begleitgruppe «Forschungskonzept Cannabisregulierung»**

Datum 21.12.2020 von 15h30 bis 18h00

*Virtuell durchgeführtes Zoom-Meeting:*
https://uzh.zoom.us/j/8485613532?pwd=S3FWMnBWNjdBYXdwelJ1WFEyRmlXZz09
Meeting-ID: 848 561 3532; Kenncode: 896160

**Hintergrund und Ziel**
Das Institut für Politikwissenschaft der Universität Zürich (IPZ) wurde vom Bundesamt für Gesundheit (BAG) mit der Erarbeitung eines Forschungskonzepts über die gesetzliche Regulierung von Cannabiskonsum zu nicht-medizinischen Zwecken beauftragt. Vor dem Hintergrund der sich intensivierenden politischen Debatte ist es wichtig, wissenschaftliche Entscheidungsgrundlagen für die Weiterentwicklung der Cannabisregulierung zu entwickeln. Ziel des Projekts ist die Erarbeitung einer übergeordneten Agenda zur Erforschung möglicher gesundheitlicher und sozialer Auswirkungen verschiedener Massnahmen zur Regulierung von Cannabis. Wichtig ist dabei auch, die in verschiedenen Schweizer Städten aktuell geplanten Pilotversuche zu integrieren und in Bezug zur übergeordneten Forschungsagenda zu setzen.

In Absprache mit dem BAG wurde eine Begleitgruppe für dieses Projekt zusammengestellt. Ziel des virtuellen Treffens vom 21.12.2020 ist es, eine Übersicht zum aktuellen Stand der geplanten Pilotversuche zu erlangen, erste Überlegungen zur Struktur des Forschungskonzepts zu diskutieren, sowie das weitere Vorgehen festzulegen.

**Traktanden:**

15:30 Begrüssung und kurze Vorstellungsrunde

15:40 Geplante Pilotversuche: Zielgruppe, Fragestellung, Methode, Stand der aktuellen Planung: Basel: GW, Bern: RA, Lausanne: FZ, Zürich: CN, Genf: DZ, St. Gallen: FE (5 min. Präsentation, 3 Min. Q&A)

16:30 kurze Pause

16:40 Vorstellung Forschungskonzept: IPZ

17:00 Feedback und Diskussion: alle -Priorisierung der Forschungsthemen und –fragen-Einordnung der Pilotversuche-Koordinationsbedarf

17:50 Nächste Schritte: IPZ

18:00 Schluss des virtuellen Treffens

Sprachen für Präsentationen und Diskussionen: Deutsch, Französisch oder Englisch

**Mitglieder der Begleitgruppe**

Prof. Dr. Daniele Zullino (HUG): DZ
Frank Zobel (Addiction Suisse): FZ
Prof. Dr. Gerhard Wiesbeck (UPK Basel): GW
Dr. Carlos Nordt (PUK): CN
Prof. Dr. Reto Auer (UniBe): RA
Prof. Dr. Sandro Cattacin (UniGE): SC
Dr. Florian Elliker (UniSG): FE
Julia Joos (Stadt Bern): JJ
Dr. Barbara Broers (UniGE): BB
Dr. Christian Schneider (Kantonspolizei ZH): CS
Prof. Irene Abderhalden (FHNW): IA
Dr. Céline Mavrot (UniBE): CM
Prof. Dr. Jean-François Etter (UniGE): JFE
Prof. Dr. Michael Schaub (UniZH): MS
Markus Jann (BAG): MJ

**Projektteam:**

Prof. Dr. Daniel Kübler (IPZ): DK (Daniel.Kuebler@ipz.uzh.ch)
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**Kontaktperson BAG:**
Adrian Gschwend (BA): AG

**Agenda of the international workshop**

University of Zurich[UZH]

Canadian Centre on Substance Use and Addiction
Evidence. Engagement. Impact.

# Cannabis research in times of legalization: what's on the agenda?

International workshop organized by

**Daniel Kübler**, Department of Political Science, University of Zurich
**Rebecca Jesseman**, Canadian Centre on Substance Use and Addiction

**Monday, 8th of February 2021**
**15:00 hrs to 19:00 hrs (CET)**
**9 am to 1 pm (EST)**
**Online workshop held via Zoom**

**Context and aim of the workshop**

After decades of political inaction and firm legal prohibition, in recent years cannabis policies have begun to change. Some countries have eased the enforcement of prohibition, others have opted for – *de jure* or *de facto* – decriminalization of cannabis use for non-medical purposes. And some governments, such as Uruguay (in 2013), Canada (in 2018), as well as many subnational territories in the United States (starting in 2012), have recently legalized and regulated the use of cannabis for recreational purposes.

As the experiences with legalized Cannabis unfold, they draw worldwide attention from decision-makers and policy advocates alike. However, regulatory choices for legal recreational cannabis use vary widely, and there are still many open questions about the impact of cannabis legalization, not only on individuals, but also on communities and the wider society. There is a need for scientific evidence about the consequences of different policy options.

Against this background, this workshop brings together prominent international experts to discuss open questions and current issues related to the production of scientific evidence about the consequences of cannabis legalization. The aim of the workshop is to identify a research agenda that will produce the scientific evidence required to make informed policy choices on regulations for legal cannabis use. This initiative has been commissioned by the Swiss government in view of its planned trials with regulating non-medical cannabis use, and a particular focus will be on the potential contribution of these trials to advancing scientific knowledge in the field.

**Products and follow up**

The two co-conveners will produce a workshop report, to be published online after the workshop. Topics for additional papers or further collaborative work will also be discussed at the workshop.

## Program

**1) Welcome and introduction (10')**

**2) Current policy changes and questions in different countries ( 40')**

- USA (Beau Kilmer, Rand Drug Policy Research Center)

- Uruguay (Rosario Queireilo, Universidad catòlica del Uruguay)
- Canada (Rebecca Jessemann, Canadian Centre on Substance Use and Addiction)
- Netherlands (Margriet van Laar, Trimbos Instituut)
- Switzerland (Adrian Gschwend, Swiss Federal Office of Public Health)

**3) Theme A: retail models (40')**

**4) Theme B: product supply chain – production, distribution and quality control (40')**

**5) Theme C: public health (40')**

**6) Theme D: public safety – including illegal market impact (40')**

**7) Conclusion and wrap up (10')**

*Note that breaks will be provided between themes.*

*To facilitate meaningful discussion over zoom, each theme session will be structured as follows:*

- *Short introduction to the theme (based on pre-meeting questionnaires)*
- *Focus 1: which foundations for a public health-oriented regulation already exist?*
- *Focus 2: which research questions still need to be clarified?*
- *Focus 3: What initiatives and collaborations could respond to these questions?*

*Please note that the meeting will be recorded to facilitate minute-taking. Recordings will not be published.*

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## Participating international experts*

| NAME | AFFILIATION | ROLE | COUNTRY |
|---|---|---|---|
| Dr. Nadine Berndt | Ministry of Health | Head of National Focal Point | Luxembourg |
| Dana Bruce | Health Canada, Controlled Drugs and Substances Branch | Regulatory Development | Canada |
| Dr. Nina Cluny | Canadian Institutes of Health Research, Institute of Neurosciences, Mental Health and Addiction | Team Lead | Canada |
| Prof. Tom Decorte | Ghent University | Professor | Belgium |
| Dr. Julia Dilley | University of Washington | Senior Research Scientist | USA |
| Adrian Gschwend | Federal Office of Public Health | Deputy Head, Policies and Implementation | Switzerland |
| Prof. David Hammond | University of Waterloo | Professor | Canada |
| Prof. Caitlin Hughes | Flinders University & ISSDP | Associate Professor (Flinders); Vice-President (ISSDP) | Australia |
| Brendan Hughes | European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) | Principal Scientist, Drug Legislation | Portugal |
| Dr. Beau Kilmer | Rand Drug Policy Research Center | Director | USA |
| Ivana Obradovic | Observatoire français des drogues et des toxicomanies | Deputy Director | France |

| | | | |
|---|---|---|---|
| Prof. Rosalie Liccardo Pacula | University of Southern California, Sol Price School of Public Policy | Elizabeth Garrett Chair in Health Policy, Economics, and Law, and Professor | USA |
| Prof. Rosario Queirolo | Universidad Católica del Uruguay | Professor | Uruguay |
| Dr. Margriet van Laar | Trimbos Instituut | Head, Drug Monitoring and Policy / Reitox Focal Point | Netherlands |
| Frank Zobel | Addiction Suisse / Sucht Schweiz | Associate Director and Deputy Director of Research | Switzerland |