NEW THREATS AND EMERGING PROBLEMS IN CELAC COUNTRIES

SOCIAL RESEARCH METHODS

COMPONENT 1 CONSOLIDATION OF THE NATIONAL DRUGS OBSERVATORIES
WG 1.6 CAPACITY-BUILDING ON NEW THREATS AND EMERGING PROBLEMS

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New threats and emerging problems in CELAC countries: social research methods

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Prologue

The most recent reports from international organisations show the changing scenario of drug use, production and marketing in CELAC countries over the last decades. They reveal new practices by National Drug Observatories (NDO) and others who carry out drug research, monitoring, and define policies on prevention and supply control.

The increasing regional identification of emerging substances, practices or patterns of use, such reviving use of traditional plant-based substances, the high rates of use of non-prescribed psychopharmaceuticals, as well as the increase and diversification of new psychoactive substances (NPS), demonstrate a changing and uncertain landscape. Due to the rapidly changing nature these phenomena, researchers must update their methodologies, or create new ones that allow the gathering of knowledge in this field. Such is the concern that guides this document: the complexity of a phenomenon that is evolving and dynamic and, therefore encourages us to reflect on the methods for its study.

Identifying new threats and emerging problems through drug information systems allows to develop questions that examne *What the threats are, In what way are they unique, and in what contexts do they arise?*

We suggest that it is possible to add another set of questionsto reflect on information systems themselves: *What are the limits or 'blind spots' that make it difficult to identify and understand emerging threats?* This allows us to reflect on the research process and not only on the research outcome.

This documentsuggests a definition of *threat* that covers both those that are the subject of identification by the information systems - *externalexternal*- as well as those within such systems -*internal*- and which limit, bias, weaken or constrain the sensitivity and ability to observe and produce reliable and relevant information.

This document brings together work guided by these guidelines and objectives and has a predominantly methodological approach. From a tripartite structure, it presents, firstly, a theoretical approach to the concept of new threats and emerging problems, secondly, it presents the current setting of these phenomena in the CELAC countries, i.e. an updated mapping of new threats and emerging problems, and finally, a range of methodological strategies for investigating threats as a subject of research.

Introduction. The concept of new and emerging

A lack of conceptual accuracy can compromise the efficiency of the analysis of the different settings, as well as the effectiveness of responses. Often, words such as *threat, risk, danger, vulnerability, problems,* etc., are used as synonyms without considering their differences and limits. However, from a strategic and methodological point of view it is essential to formulate a greater conceptual delimitation.

Denoting a phenomenon or process as a ***threat*** will largely depend on the resulting equation between perceptions and responsiveness. In this sense, the *threat* shall be a type of inferential relationship in which certain signs or manifestations are perceived as the announcement of an undesired situation or risk to the recipient or observer. Consequently, the *threat* is not an object that we can analyse in itself, but a relationship that must be evaluated in its relational components and the different capacities, means, political conditions and strategic arrangements of observation systems (Rotolo, Hicks and Martin,2015). In this setting, the concept puts out the fact that new potentially negative phenomena are in nature hard to counter with traditional investigative means. This opacity occurs due to them not having appeared before, as well as due to the "blind spots" of the observation system itself due to the mismatch it experiences before new scenarios. For this reason, the strategic sensitivity of information systems is a fundamental part.

Parting from that, it is possible to arrive at a definition of *new threats* in both **radically novel phenomena, associated with technological innovation processes and relatively rapid growth, characterised by a certain consistency that persists over time and has the potential to have a considerable impact on the observed domain** (Rotolo et al., 2015). In addition, and by providing the relational nature and attributes proposed in the conceptual definition of *new threats,* we consider it necessary to differentiate two types among them: external and internal.

New ***external threats*** are understood as disruptions located outside of the information system that may impede or hinder processes. ***New internal threats*** are deficiencies, shortages, or weaknesses present at the different structural and functional levels of the information system, which impede or hinder processes and affect the strategic performance of the system. They are some of the "blind spots" of social information systems.

Emerging problems, can be understood as previously known **phenomena, but have grown to a critical level that signifies a threat** (Cabrera Toledo, 2012). In this sense, a threat may be a previously unknown phenomenon, or a previously known phenomenon that has recently evolved changed in nature, magnitude, and/or expression.

Overview of threats and emerging problems

N*ew threats* and *emerging problems* vary considerably from country to country, region to region, social group to social group, and over time. While it is true that international and national agencies refer broadly to the existence of a global "drug problem," substance use, high-risk behaviours, their impact, and consequences on health are not homogeneous. Local situation assessments based on the context each country, city or community, are necessary requirements to plan and develop appropriate interventions.

Although local level assessments are important, it is still possible to identify common themes in emerging threats across countries. Emerging phenomena have a significant impact on the the drug problem, whether because of their magnitude, or because of the new risks and harms they present, creating new challenges for political and institutional responses. The document is organised into three major areas: drug supply, drug use, and drug information systems.[1]

A. External threats and emerging problems

I. Drug supply

a) Increased production and diversification of NPS

NPS[2] is a term that includes both natural and synthetic substances. These substances were not necessarily discovered recently, in fact, many were first synthesized more than forty years ago; rather NPS refers to substances that recently appeard on the market as drugs of abuse.(Donzelli, 2016). Within this large set of substances are smaller subsets, whose chemical forms, effects, modes of use, and trafficking, are diverse. Therefore, considering all these substances as a homogeneous element when making decisions in the matter may lead to misunderstandings.[3] [4]

The available information shows evidence of a growing and diversified phenomenon. Between 2009 and 2017, 803 NPS[5] were reported worldwide (UNODC, 2018d), and hundreds of novel NPS have been synthesised in recent years. In 2016, 479 different NPS were identified, of those 72

[1] The following presentation of threats and emerging problems is partial, since given the new or emerging nature, it can be assumed that any mapping will always be tentative. As examples of threats that are left out of this document, traffic modalities with semi-submersibles, changes in the concentration of cannabis, etc. can be mentioned.

[2] "NPS" is a term coined by the United Nations Office on Drugs and Crime (UNODC) to designate substances of misuse, that are used pure or in preparations, which are not controlled by international treaties but that can pose a threat to public health. In general, it is a generic term that includes substances that try to mimic the effects of controlled drugs (UNODC, 2013:184).

[3] A critic of the use of the concept of NPS can be read in Potter & Chatwin (2018).

[4] Synthetically, three groups can be differentiated: Research Chemicals (synthetic substances used recreationally and whose effects have not been thoroughly studied), Legal Highs (chemicals that combine one or more substances not subjected to international controls, which mimic or replace the effects of controlled substances) and Smart Drugs (synthetic or natural substances that aim to expand brain capacities or minimise their deterioration) (Donzelli, 2016).

[5] Although that is the number of NSP at the date of writing this document, it should be noted that the phenomenon has continued to grow so that according to the UNODC EWA the number of NSPs reported until mid-2019 was 904.

were identified for the first time, and 60 had disappeared from the market since 2013. An increasing number of countries report NPS seizures in the CELAC countries (UNODC, 2018b). The group of substances in which the greatest occurrence of NPS has been reported is stimulants, followed by synthetic cannabinoids, followed by hallucinogens and opioids, although the latter two have been growing since 2015.

While within certain NSP groups it is possible to recognize some processes similar to the synthetic substance manufacturing methods under control, in others it is difficult to thoroughly examine the manufacturing methods used and identify and prioritize a set of key precursors, due to the diversity of chemical substances that could intervene in this process and the low capacity for chemical analysis and lack of forensic resources of the CELAC countries due to the current structure of the laboratories and the training of human resources. A clear example of the first is that, since 2009, the NPP and the ANPP, precursors of a quantity of fentanyl-like substances, are the only NSP precursors placed under international control. In addition, the problem of the legal scope of controlling substances used as inputs is raised, when the final product is not controlled.

b) Changes in adulteration processes

An increasing number of substances used to cut cocaine (levamisole, diltiazem, hydroxyzine, aminopyrine, lidocaine, caffeine, etc.) have been detected. For its part, the tightening of regulations for purchasing prescription opioids in the United States led many of the people who relied on medicinal opioids to start purchasing them through other means or to use heroin, often mixed with fentanyl and/or its analogues to mimic the potency of synthetic opioids. The mixture of heroin with more potent synthetic opioids has raised the number of overdose deaths, as users are unaware of the adulteration of heroin or the risk it represents when combined with powerful opioids even in very small amounts (INCB, 2018), although the proportion of deaths from the use of these drugs is even higher when not mixed with heroin. While this phenomenon was mainly verified in the United States and Canada, an alert in CELAC countries is timely due to a possible spreading[6].

In South America, the Sub-Regional Compendium on Smokeable Cocaines (CICAD-OAS, 2016a) concluded that, of the total samples of smokable cocaine analysed, phenacetin was present in all, albeit in different relative proportion according to country. In addition, acetaminophen, caffeine, lidocaine and aminopyrine were among the most common adulterants present. Evidence exists (Galvalisi, 2017) that when caffeine is smoked, it increases the psychostimulant effect of smokable cocaine. Even in cases where the user had intended to use a single substance,

[6] The toxicology laboratory of the San Pablo School of Medicine reported a suspicion that fentanyl and butylone were related to six cases of acute poisoning, produced in August 2016 in Campinas, Sumaré and Indaiatuba, in Brazil (UNODC, 2017c) . Colombia issued an alert on **opioids** (Fentanyl and Oxycodone) in August 2019 after its seizure.

the presence of adulterants could lead to greater health problems due to a lack of knowledge of the interaction between them, even more so in cases of acute poisoning.

c) New forms of drug marketing: online markets

The purchase and sale of drugs through virtual sites have emerged in recent years as new forms of marketing. There is evidence that the scale of drug trafficking in the *darknet* it is growing rapidly (UNODC, 2018d). It is estimated that there are currently more than a hundred such markets, "*Silk Road,*" being the most recognised among them (opened in 2011 and disrupted in 2013).

Darknet markets are websites that present formats similar to other trade facilitator platforms (such as *eBay* or *Amazon),* but that differ in so far as they guarantee anonymity (EMCCDA, 2017). There are several ways to access these markets: surface websites provide address listings to access *darknet* markets; "mirror" sites on the surface web provide hyperlinks to hidden sites; and "invitation only" markets, where people need to be invited to participate by a user of the platform. One of the most used programmes to access the *darknet* is the "Tor" software, which allows searching for substances for sale, usually by category (stimulants, opioids, etc.), although they are not always correctly categorized. The most popular drugs on the *deep web* are cannabis, followed by opioids, cocaine, amphetamine-type stimulants, dissociative substances (ketamine, GHB, GBL), and hallucinogens (LSD, PCP). However, chemical analyzes show that many of the substances sold by this route are NSP, although they are marketed under traditional drug names.

There are signs of development of decentralised software and new encryption technologies, cryptocurrency usage, and new forms of delivery. One can presume that in any illicit market, buyers and sellers in virtual markets drive strategies to reduce vulnerability of transactions, ensuring privacy, anonymity, authentication, hidden exchanges, and untraceable payment methods. Finally, virtual markets may disrupt traditional markets, especially if they become more accessible to users (Griffiths and Mounteney, 2016).

II. Drug use and abuse

a) Changes in drug use patterns among adolescents

Drug use is spreading among adolescents in CELAC countries, a trend that has been observed for years. According to the "Report on Drug Use in the Americas, 2019" (CICAD-OAS, 2019), some aspects of the problem are presented as threats to public health: excessive use of alcohol, early onset of drug use, increased drug use among females, increased marijuana use, and low perception risk associated with use.

The consumption of alcoholic beverages among the adolescent population is not a new phenomenon but rather an emerging problem that represents the most widespread form of substance use in the Americas. While the prevalence of alcohol use during the past month varies by country, *binge drinking* (excessive episodic consumption of alcoholic beverages among students who drank in the last month) is established as a common pattern. The **binge drinking**

was identified as a common pattern of use that was already analyzed by the year 2015 and that is again verified towards the year 2019 in the CICAD reports At least one in two students who used alcohol in the month prior to the survey reported binge drinking, and in several countries in the Americas the trend of binge drinking has increased steadily for years.

Another aspect linked to the consumption of alcoholic beverages in adolescents is the decrease in the **age of the onset of use**. The cited reports indicate that in ten countries the past month prevalence among eighth graders, adolescents aged 14 and under and representing the youngest age group in secondary school student surveys,, exceeded 20% and in three of countries it exceeded 30% (Argentina, Colombia, and Saint Vincent and the Grenadines). This suggests that, in many countries of the Americas, alcohol is easily accessible to minors, a particularly vulnerable group since it is in its development stage.

One change seen at the global level and also in CELAC countries, furthermore, is the increase in the rates of alcohol use among women, which in some countries exceeds alcohol use among males in some countries. Among adolescents this change is noticeable in the consumption of alcoholic beverages, and marijuana, cocaine, and inhalant use. The use of psychopharmaceuticals, especially non-prescribed tranquilisers, is higher among women, there have also been increases in use of other drugs by women. This change implies new threats to this specific group of adolescents and young people that requires further research and prevention.

Marijuana is the most commonly used drug, not only worldwide, but also in the CELACcountries.. Epidemiological studies in the countries of the Americas show concerning indicators such as its use at very young ages. The latest information indicates that in most countries with **trend data for cannabis use** in the secondary school population, there are increases in use over time. Analysis in countries that have trend data show marijuana use among secondary school students rose in nine countries while it remained stable in two. (CICAD-OAS, 2019).

The perception of harm or risk associated with occasional drug use is a relevant indicator of attitudes and beliefs about drug use, and is usually linked to changes in prevalences and patterns of use. In this sense, in some countries in the CELAC countries, such as Argentina, Chile, Uruguay and Costa Rica, there has been a steady decline in **perception of “great risk” of occasional use of marijuana** and an increase in the consideration that it does not cause any harm: in most countries, less than half of high school students think that the occasional use of marijuana has a “high risk”. Moreover, in most countries where the percentage of secondary level students who consider that the occasional use of marijuana has a “high risk” is low (20% or less), the prevalence of use in the last year exceeded 15% (CICAD-OAS, 2019). In ten countries, less than half of students think the occasional use of cocaine has a “high risk” to health or a “risk” in

general (CICAD-OAS, 2019). Therefore, the trend suggests that young people's attitudes and beliefs about the harms to healt hand other risks associated with drug ue may be declining.[7]

b) Use of NPS and plant-based substances

Some varieties of plant species, previously presumed to be intended for religious rituals, appeared in recent surveys as drugs used recreationally among young populations of high socioeconomic strata. The latest Colombian general population survey of 2013 reported that the consumption of hallucinogenic fungi, Yagé or ayahuasca, and savannah cocoa (*cacao sabanero*), (also known as *brugmansia* or *floripondio* in Colombia), whose psychoactive component is Scopolamine. The rate of lifetime use was 0.8%, with higher use among men (1.4%) relative to women (0.3%). The use of these substances in Colombia was higher than that of others such as LSD, "ecstasy", ketamine and amphetamines. (CICAD-OAS, 2019).

Some countries in the CELAC countries have identified the use of plants with psychoactive properties in general population surveys In countries most with general population data on psychoactive plant use, consumption is higher among men than women. The latest drug use survey among secondary students in Costa Rica recorded lifetime prevalence of hallucinogenic plants/herbs of 2.7%, being surpassed only by the use rates of marijuana, inhalants, and psychopharmaceuticals. Treatment data from Costa Rica indicate that, between 2009 and 2012, at least 300 people requested treatment for problems arising from the consumption of plants.

Several Latin American countries have estimated significant levels of use of LSD, synthetic cannabinoids, plant-based substances, and ketamine (CICAD-OAS, 2019). Between 2013 and 2016, more than 60 different substances were reported and as of August 2017 a total of 130 different NPS had been reported in seven South American countries, and CICAD noted that injection use of stimulant NPS remains worrying concern, in particular, because of the risks of transmission of HIV and hepatitis C (CICAD-OAS, 2019).

c) Expansion of heroin use

Another threat in the CELAC countries raised by CICAD in 2015 (CICAD-OAS, 2015) is the expansion of heroin use to Colombia, Venezuela and the Dominican Republic, when its use was previously a problem mainly located in North America, especially in Canada and the United States, but also present in Mexico. The increased demand for treatment for heroin abuse

[7] The complexity of the phenomenon nevertheless eliminates any linear determination. In this sense, recent research finds that risk perception and use are not always strongly linked. For example, Sarvet et al. (2018) show that the rapid drop in perception of marijuana risk has not been accompanied by an increase in marijuana use. In Washington state, which legalised recreational cannabis in 2012, the prevalence of use has remained stable while risk perceptions decreased (Fleming et al. 2016). This is a trend in the United States, beyond the laws introduced in some States (Sarvet et al., 2018; Schimidt et al., 2016).

problems was what first alerted the Colombian authorities in 2014 and in the Dominican Republic as early as 2012. Venezuela already had a significant number of patients in treatment for heroin as early as 2010. Demands for treatment for opioid dependence have increased in other countries in the CELAC countries.

d) Increased opioid drug abuse

The 2018 World Drug Report (UNODC, 2018d) warns of increased use of opioids for non-medical purposes and their adverse effects on the health of the population. An example is the situation in the United States where the use of illicitly produced fentanyl, mixed with heroin or other drugs, is the main cause of the unprecedented number of overdose deaths. In Europe, the opioid of greatest concern remains heroin; however, methadone, buprenorphine, and fentanyl are also used for non-medical purposes. In the countries of West Africa and North Africa and the Near East and the Middle East, non-medical use of tramadol, a substance not currently under medical control, is a concern. Tramadol is perceived as a way to increase energy and improve mood. Nevertheless, tramadol may lead to physical dependence. The toxicology laboratory at the Faculty of Medicine of Sao Paulo (Unicamp), has linked fentanyl and butylone to six cases of acute intoxication that occurred in August 2016 in Brazil. These indications may show that the trend could spread to the rest of South America (UNODC, 2017c).

Finally, the combined use of opiodes and benzodiazepines, carries serious harm risks, especially since it increases the risk of overdose when used together with heroin. Benzodiazepines are often listed in reports of lethal overdoses caused by opioids such as methadone.

e) Unawareness of the drugs used

A new problem being observed in CELAC countries is that users are unaware what drugs they are using. There are at least three reasons for this: the proliferation of NPS, the process of adulteration of traditional drugs, and the increase in the potency of its active ingredients.

By definition, NPS are unknown substances and, for the most part, are products of synthetic and chemical processes. A slight change in a molecule can transform a known substance into a new substance with different effects. As a result, the user population often is naive of what drug they are using. The user may believe he is using LSD, but it is a counterfeit drug, such as an NBOMe, they might believe they are using benzodiazepines, but it could be adulterated with fentanyl, or they might intend to purchase an opioid, but be unaware that the version they bought is much stronger than they expect. Each of these issues is **linked to the emergence and marketing of NPS.** . From a health intervention point of view, the potential issues have to do with both what drug was used, and the mode of use: when the user does not know what they are using, they may accidentally overdose. When the drug is unknown, medical services be able to act upon the pharmacology and toxicology of the substance correctly; how to identify ithe substance or the appropriate emergency protocol to follow. Similarly, in order for national laboratories to identify the NPS, they need to know what they are testing for. Therefore, ignorance of the drug used can complicate detection and interventiones. It is further noted that

in many cases NPS are used to replace traditional drugs but without changing the branding of the product. Innovations appear in all groups of traditional substances classified according to their psychoactive effects: sedatives/hypnotics, classic hallucinogens, stimulants, cannabinoids and opioids[8] [9].

Lack of knowledge is also **linked to the adulteration process** of traditional drugs such as cocaine or heroin by generating "new user products" that are far from their original versions and which turn out to be more harmful to health due to the amount and type of adulterants they contain. Changes in marketing patterns (for price and routes) have favoured the introduction of new substances, such as so-called *paco* in Argentina, *chespi* or *crack* in Paraguay and *crack, merla or oxi* in Brazil which are highly adulterated cocaine base paste or cocaine-free base, and, in Uruguay and Chile cocaine base paste markets have expanded. Adulterants such as phenacetin, acetaminophen, caffeine, lidocaine, and aminopyrine have been found in five South American countries (CICAD-OAS, 2016).

The third form of unawareness is that drug users may be ignorant of the changes in the same substances due to the **increased potency of their active ingredients.** Examples of this are ecstasy use when the MDMA content is higher than usual, or the THC level contained in different marijuana samples (levels ranging from 4% to 25% or more are found on the market). In several Latin American countries, the use of ecstasy in the young population has increased, although drugs sold under this name contain a range of substances other than the originating substance (3,4-methylenedioxymethamphetamine or "MDMA"), and also tablets with high doses of MDMA have been detected, which can also be very harmful. [9]

B. Internal threats and emerging problems

in addition to the external threats identified above are the internal threats that are related to the "blind spots" in drug information systems, which present a different set of limits to our ability to identify and understand new drug phenomena.

[8] In the group of sedatives/hypnotics etizolam and cloxazolams appeared as substitutes for diazepam; in dissociative, 3-methoxyphencicleclidine and dechloroketamine for phencyclidine; in that of hallucinogens 1p-LSD and 2C-I, replacing LSD and 2C-B; in stimulants 4-fluoroamphetamine and dimethylcathinone as substitutes for cocaine and methamphetamine; in cannabinoids AB-PINACA and ADB-FUBINACA for marijuana and opioids, furanil-fentanyl and ocfentanil as substitutes for morphine and heroin.

[9] The Laboratory for Analysis of Illicit drugs of the Institute of Public Health of Chile, detected in 2017 the circulation of four substances derived from lysergic acid diethylamide called (1M-LSD), (1P-LSD), (ETH-LAD) and (AL-LAD) that were sold as LSD, and which have proven to be more potent.

[9] Between April and June 2017, the project of the NGO Association Welfare and Development, Energy Control, detected the circulation of tablets containing between 245 and 277 mg. of MDMA. https://doctaclub.wordpress.com/2017/08/03/detectan-pastillas-con-muy-altas-dosis-de-mdma-y-otras-sustancias/

The NDOs[10] in the CELAC countries are diverse with respect to size, budget, human resources, and areas of research focus (COPOLAD, 2017). More than half of the NDOs (13) have a specific budget for research, publications, or training, while 70% (20 OND) has a specific budget for human resources, although the number of personnel assigned exclusively is reduced in most and the other NDO's do not have permanent staff. As regards the areas of research, some NDOs have research studies on above and beyond national populations studies that are considered the standard monitoring tools supported by OAS-CICAD and used by the majority of CELAC countries, such as studies amongjuvenile detention, adolescent population, workplace studies, etc.), studies on specific drug issues (marijuana use, base paste, synthetic drugs, or emerging uses), these studies are limited to a smaller portion of the NDOs of the CELAC countries (COPOLAD, 2017). Studies that have been implemented more broadly among CELAC countries are secondary school surveys, general population surveys, and surveys among patients in treatment. These studies are conducted applying standardized research methods, involving cross-sectional designs, with nationally representative samples (with some exceptions) and provide a descriptive statistical analysis. These design decisions respond to key problems identified by the CELAC countries, and include agreed uponvariables and indicators.

Two levels can be differentiated in the identification of *internal* threats. Firstly, the **institutional** type that addresses threats linked to organisational and operational aspects that limit the power of information systems, such as budgetary, human resources and articulation aspects with other information systems for access to secondary sources and/or the implementation of studies that push the institutional boundaries for comprehensive understanding of the problem. The second level, which can be called **operational,** refers to threats linked to technical and technological aspects in the production of knowledge. These will include certain limits in traditional design decisions[11].

I. Internal institutional threats

Taking into account that to ensure proper functioning, information systems need to be embedded in an organisational structure in which functions and tasks are distributed, and where there is interrelationship between national agencies, it is important to state what kind of threats concerning the organisation can impact the system. *Internal* institutional threats can be separated into three fundamental aspects: weaknesses related to the organisational structure and distribution of functions, weaknesses related to financial capacity, and weaknesses related to human resources-related aspects (Oszlak and Orellana, 1993). We will find a variety of configurations of weaknesses and strengths according to the characteristics of each of the information systems.

[10] While drug information systems include NDOs, they do not relate exclusively to these. In this document, since it is focused on the methodological devices used by NDOs, endogenous threats refer to them. It should be said that the existence of articulation processes with other entities or sectors minimizes the impact of these deficiencies.

[11] Given the methodological emphasis of this document, the levels of endogenous threats presented the operational level will be the one further developed, with respect to strengthening it.

Weaknesses **in the organisational structure** and distribution of functions have to do with the validity of the information system, its range within the institutional organisation chart, and the overlapping of functions that may exist with other agencies. Morevoer, Financial **capacity shortfalls** are associated with general and specific budget allocations, for example, for human resources, studies, training. And finally, the **weaknesses associated with human resources** such as the number of human resources dedicated to the agency, the level of training of human resources, and the likelihood of permanence or stability of the technical working groups or advisory boards that coordinate and direct processes.

These weaknesses are threats insofar as they limit the operational potential of information systems. For example, lack of financial resources or human resources limits the possibilities of estimating research costs, attending training days or conferences, inability to carry out research and monitoring, for example. The identification of these threats allows us to reflect on the current information systems and analyse what elements may need to be developed, and strengthen.

II. Operational-type internal threats: traditional design limits

National drug use surveys are the first studies that drug information systems in CELAC countries implemented, and are essential sources of information to define drug policies as they tools that permit an initial diagnosis of the prevalence of drug use, and monitor changes in drug use over time. They are considered to be the best way to gather statistically robust information from large populations by applying random sampling methods. Nevertheless, they have some limits, especially if the design of the study seeks to detect new threats or emerging problems.

First, national surveys are not designed to **detect the occurrence of NPS** as they are conducted with closed questionnaires asking for a specific list of drugs. While most questionnaires include an "other" response category, which may identify the emergence of new substances, this method does not allow for deeper inquiry in this category. However, if there was any evidence from other records of a new or emerging drugs (such as laboratory tests of samples of seized synthetic drugs and on-site analyzes), this method could provide information regarding magnitude and extent of use, assuming that the sampling methodology meets basic standards, and the drug is clearly identified.. It is advisable in this regard to review the questionnaire to perfect it.

National surveys are susceptible to two types of measurement errors. The **non-response error** is a risk for any household or other face-to-face survey and can result in biased prevalence estimates if the subject refuses to respond to the questions. The second type is **social desirability error,** an effect that occurs when people respond to questions, but do not declare their true behaviours or opinions because they perceive that they are socially judged, thereby skewing the results towards underestimation.

Surveys among secondary school students share several of the limitations of adult population surveys, although the effect of social desirability tends to result in the under-reporting of drug

use. However, the opposite could happen: in some contexts young people may over-report drug use, possibly because it viewed as positive among peers (Castillo-Carniglia et al. 2017).

Methodological strategies to investigate new threats and emerging problems

The complexity of emerging problems and new threats poses a major challenge for public health policies, as well as data gathering and research.. If indeed, we must perform a critical review of traditional research methods to understand emerging threats, then it is also important to consider our underlying epistemological assumptions. The following is an outline of epistemological shifts (towards complexity, reflexivity, pragmatism, and collaboration) involved in the understanding of new threats and emerging problems, to then present possible methodological devices for their knowledge and understanding.

A. Epistemological shifts

Scientific practice is continually producing and recognising new knowledge objects. Not only new ways to reference the same old objects, but, in fact, radically new, really emerging objects. In this context, the *complexity* category is appropriate to summarise the set of properties of objects of knowledge of interest to contemporary science, open to reflexivity and the contingent (Almeida-Filho, 2006). This is a **shift to complexity** in a setting of *new threats* and *emerging* problems that is in itself complex given its heterogeneity and the challenges it imposes when it comes to generating protocolised responses. This complex character does not refer to the "paradigm of complexity", but to the demand for a holistic view that allows contextualised analysis and micro and macrosocial articulations[12].

But what is a complex object? Following the approach of Naomar Almeida-Filho (2006), it can have different manifestations: it is part of a system of partial totals and, at the same time, it can be understood as a system; it is subject to non-linear determination functions, so it does not enable prediction, nor can technology be generated from it; it can be captured in multiple states of existence as it operates at different levels of reality; and is multifaceted, requiring transdisciplinary operations that produce synthetic models.

Besides, the **reflexive shift** is part of the differentiation of two constellations in relation to science, practice and daily life: *simple scientification* and *reflective scientification* (Beck, 1998). In the first, science will apply to the given world of nature, man and society, and the demand for rationality will be free of methodical self-reference of scientific doubt. In the second, the sciences face their own products, defects, induced problems, extending scientific doubt to its immanent foundations and external consequences. In terms of practice, reflexivity consists of avoiding some epistemological obstacles that usually arise in the form of conceptual dichotomies or dualisms (qualitative/quantitative, reasons/causes, subjectivism/objectivism, etc.), appealing to "breaking techniques" (logical criticism of concepts, statistical contrasting of

[12] As an example, in the case of NPS, its changing geography, its deterritorialisation, its networked and underground economy (deep web), its bitcoin-signified transactional economy, the convergences of the grammar of its commodification and its policies of experience, seem to converge in that the map of new threats tends to refer us to complex objects.

immediate evidence, relational analysis, etc.) that allow us to depart "pre-elections" from spontaneous social sciences and build the object on the basis of criteria (Vazquez, 2006).

Thirdly, the **pragmatic approach** proposes the use of a pluralistic focus based on various complementary methodological and technical approaches, given the complex, diffuse, and contradictory nature of social reality. This epistemological shift will be the basis of an investigative practice open to epistemological pluralism that allows to develop and apply a multi-strategic approach derived from the identity of the object analysed itself and not from methodological apriorism (Robertt et al., 2016). A pragmatic researcher will be able not to limit his/her skills, curiosity and interest to a single field of competence, so this orientation will be consistent with a multi-strategic approach: the construction of the object of study from multiple analytical cuts to carry out empirical and theoretically dense coverage, based on the consideration that social activity cannot be analysed outside the space-time context or without integration at the macro and micro levels. This turn is relevant in a context characterised by new and emerging trends. In this sense, the investigative work is now being asked to demonstrate its effectiveness: how they can demonstrate that they work, that they succeed in the rapid identification of emerging phenomena and problems and in the promotion of effective political or practical responses. Pragmatic guidance provides a useful starting point, framing problem-solving within mixed or multi-method methods (Johnson & Onwuegbuzie, 2006; Patton, 1990; Morgan, 2007; Rossman and Wilson, 1985; Tashakkori & Teddlie, 1998).

Finally, complex factors such as the globalisation of information and communication technologies, the cultural leisure industries and biotechnologies applied to the production of new drugs and medicines, call for a rethink of the systems of information. Systems with flexible structures, whose functioning is around cooperation and interactivity, and that configure expanded communities are required: capable of developing complementary, synergistic, interactive efforts, with the support from the different actors and aimed at achieving common objectives and interests. This is a **collaborative shift.** Referring to the field of security, authors such as Funtowicz and Ravetz (Ponsa Herrera, 2016) propose the creation of *extensive peer communities,* which involve the inclusion of legitimate participants to determine the quality of scientific contributions in contexts of multiple uncertainties. This proposal converges in some places with the *Trendspotter Study* methodology implemented by EMCDDA, when it comes to expanding the community –mainly expert – consulted in specific studies. However, they diverge in the radicality assigned to the notion of extended community, in ways of articulating the participation of user communities with NDOs or EWSs. Specifically, from the perspective of an *extensive peer community,* inclusion would be permanent and interactive in nature[13], narrowing the gap between expert rationalities and social rationalities, in contrast with tactical and consultative inclusion [14] [15]. *Expanded communities* enable to: multiply sources so that they can

[13] The actors participate in the joint analysis, which leads to the formulation of plans and the creation of new local groups or the strengthening of existing ones. It tends to include interdisciplinary methodologies and uses a structured and systematic learning process. These groups control local decisions and therefore the population has an interest in participating.

[14] The actors participate when they are consulted. Organizations define both problems and information collection processes. This process does not offer any involvement in decision-making.

[15] In this regard see:https://observatoriodrogas.org/investigaciones-tematicas/observatorio-de-nuevos-consumos-de-drogas/

contrast data and gauge their relevance; identify, monitor and manage risks at an early stage; understand the strategic value of formulating appropriate questions; develop flexible organisational criteria to adapt to unforeseen circumstances; create new theoretical, conceptual or methodological tools; and generate a culture of cooperation-based early warnings.

B. Methodology and methods

The above so far recovers the current scenario of new threats and emerging problems in the field of drugs in CELAC countries, and also raises the opportunity for a shift in the way to attentively understand the complexity of these objects, the reflexivity of information systems on their own internal threats, pragmatism as a research approach, and the expansion of networks in research. The following are low-utilisation research methods by the NDOs of the CELAC countries, which enable them to generate in-depth or extensive knowledge of emerging threats and problems.

The emphasis on **design,** as a necessary background to the presentation of methods, underscores the fundamental role of a whole network of decisions that are involved in the knowledge process, and which are sometimes reduced to a mere technical issue of applying high-status methods that appear as methodological apriorism (Lozares et al, 1998:28). We will state that a non-designed research activity is not possible and that such a design consists of a minimum set of decisions on problem delimitation or object construction, population and sample selection, data collection, and analysis. The last three decisional knots - selection, collection and analysis - must be instrumental in resolving the problem raised, often requiring a process of "methodological recreation" as a result of the pragmatic adequacy of decisions towards specific research questions (Marradi, Archenti, Piovani, 2018). This may also result in triangulation strategies or integration of orientations, methods, data or researchers (Marradi et al.:441), either in a commitment to complementing two different pictures that suggests the problem, the combination of methods for the improvement of a phase of research, or the convergence of methods to obtain a single picture with the intention of increasing validity (Bericat, 1998).

The presentation of methods sensitive to the new and emerging is organised around large devices which are differentiated according to their articulation in information systems, and comprising a number of extensive, intensive or mixed methods.

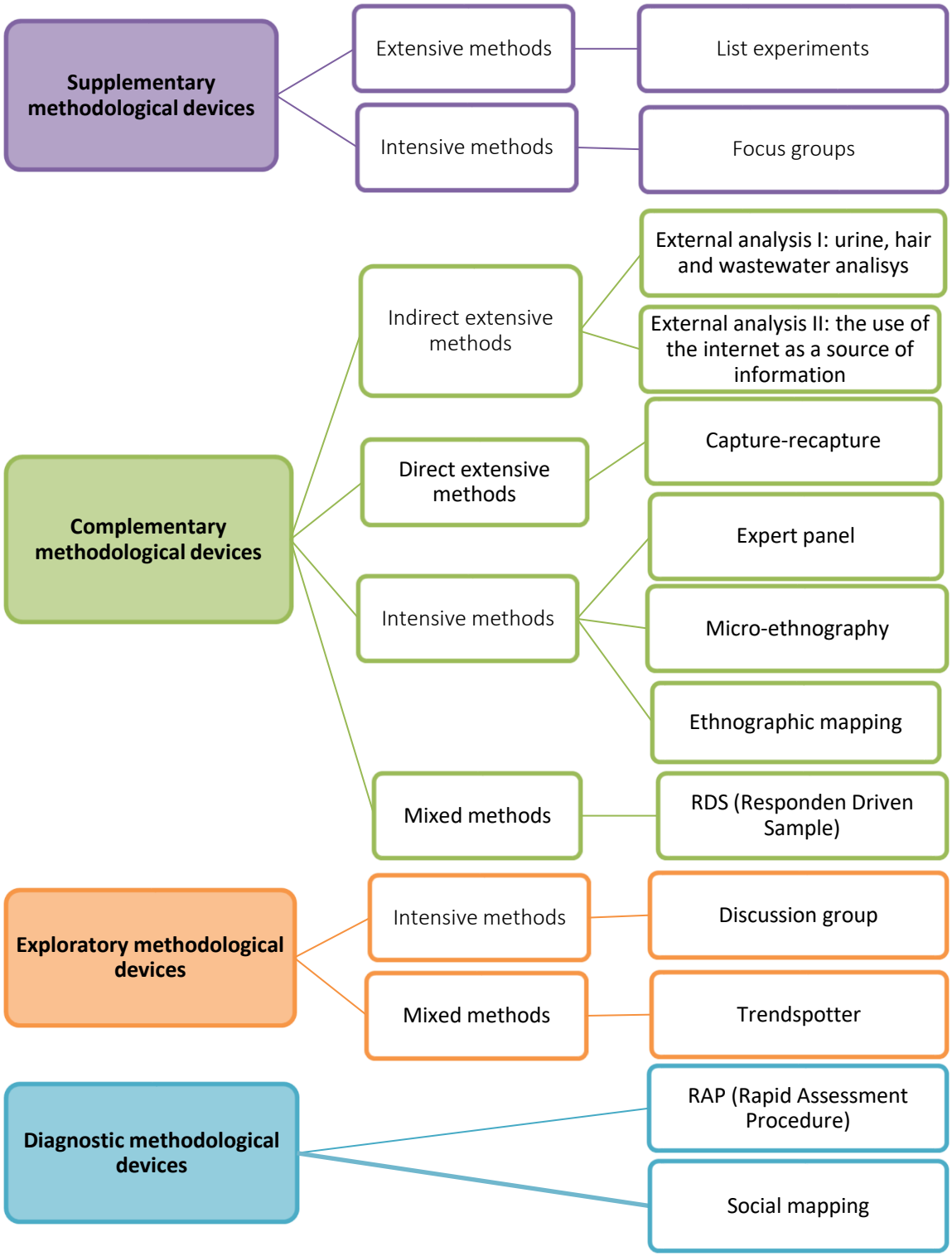
Supplemental methodological devices involve the incorporation of small technical-methodological modifications at the level of the processes of collection, analysis and interpretation of information, and their scope is restricted to improvement of information systems (e.g. list experiments). **Complementary methodological devices,** for their part, aim to reform information systems through the expansion, diversification and innovation of the technical-methodological (e.g. ethnographic mapping or external analysis). Third, **exploratory devices involve** an approximation to a phenomenon that by its novelty does not allow for a systematic description, or when resources are insufficient to undertake more extensive work (e.g. Trendspotter). Finally, **diagnostic methodological devices** refer to what is used to recognise, on the ground where an action is intended, the current and concrete symptoms or

signs of a problematic situation we want to transform (e.g. Rapid Assessment Procedure or social mapping).

The methods presented in each of these devices are classified according to **extensive**, **intensive** or mixed (Conde, 1993). While the firsts investigate knowledge that is common to all or most of the objects in their class, the seconds seek to know facts that refer to specific *cases.* Due to the restricted number of objects under investigation, in the latter type of methods it is possible to study them in depth and in their genuine environment, taking into account their characteristics and relevant relationships - that is, the study is *holistic*-, achieving a deep understanding of its position and meaning in the specific social and cultural context (Routio, 2017). Finally, mixed methods involve an articulation of the extensive and intensive.

The following list of methods no depletes the set of possible methods to study the phenomena in the field of drugs. Research strategies such as laboratory studies, biological samples, or methods with aggregated data, among others, will be left out of this list for future compilations.

Diagram of methodological strategies to investigate new threats and emerging problems.



I. Supplementary methodological devices

The supplementary nature of such devices refers to their scope being restricted mainly to the improvement of information systems. This implies the incorporation of small technical-methodological modifications, both at the level of the information collection processes, as well as their analysis and interpretation.

Extensive methods

The prevalence of drug use is investigated through the survey method, being undoubtedly the fundamental path to this objective. However, one of the central problems in the production of information is that, in general, drug use is a private life activity that people often declare to do in less quantity or frequency than how they actually do it (under-reporting), given that social biases are present (Fisher, 1993), thus causing unreliable estimates. Quantitative social research has developed methods of indirect application to reduce the impact of social desirability biases.

List experiments

The list experiment is conducted in a survey (Kuklinski, Cobb and Gilens, 1997) and consists of presenting a list of substances to the respondent to indicate how many, and not which, it consumes. List experiments have been used to learn about the true prevalence of drug use (Biemer and Brown, 2005).

Substances used by people (coffee, water, etc.) or actions frequently performed, including the substance or behaviour considered to be frequently under-reported, should be included in the list. In this case, the use of a drug. The difference between the mean of this question and that of direct prevalence, multiplied by 100, is the current prevalence of use of that substance. Half of respondents receive a list of actions that does not include the sensitive behaviour or substance (e.g., use of a difficult-to-report drug), while the other half of respondents receive a list that includes the same actions or substances than the first group, plus an additional item with the sensitive behaviour or substance. Once the respondents in each group have said how many of these actions they have done, or how many substances they have used, the incidence of sensitive behaviour in that population is calculated by subtracting the average number of actions in the second group minus that of the first, and multiplying by a hundred. Finally, this data should be compared with a direct measurement. If there is a sub-report of sensitive behaviour, measurements based on an indirect question would be expected to produce a higher incidence of sensitive behaviour than when using a direct question (Holbrook and Krosnick 2010, Gonzalez-Ocantos et 2012).

Relevance and objective

The main objective of the list experiment is to measure the prevalence of use of a drug in a valid way, avoiding under-reporting. In this sense, it allows to detect the unreported use, since the respondents do not feel social pressure when reporting how many of the actions in the list they

performed or how many substances they use. This type of experiment, which is included in a survey that also measures prevalence directly, produces information that allows us to assess the validity of direct measurement of the prevalence of a substance in society and to know if there is an under-reporting of use and its magnitude. For this reason, list experiments should be conducted in combination with national user surveys or at least surveys that measure consumption directly and are representative at the national level.

The relevance of this method increases the greater the undesirable perception of the behaviour we want to measure. There is evidence that estimates of the prevalence of drug use in countries with stricter drug laws are less valid than in countries with more liberal standards (Steppan et al., 2013). It is therefore relevant that information systems, together with national surveys of adult and youth populations, conduct list experiments to find out if under-reporting exists, and what its magnitude is, in the prevalence of drug use. In this sense, list experiments are a way to validate direct questions about consumption of traditional surveys.

Practical aspects of the method

List experiments are representative as long as the survey in which it is formulated is representative. This is why it is advisable to conduct them in national adult population surveys, national youth surveys or other surveys representative of the population as a whole. They can be implemented in surveys where respondents can see the listing for themselves. Therefore, the **recommended application modes** are face-to-face surveys, self-administered surveys, either in paper format or *"online".*

The inclusion of the list experiment in a survey does not significantly alter the duration. Therefore, the **application** time it takes to collect this data is the same time it takes to perform the field work of the survey where the experiment is included.

A key feature of any experiment is that the assignment of individuals to the control group or treatment group is randomised. Only if there is **random assignment** can we rule out that there are biases in the assignment that can explain the differences in the results. The form of randomisation will depend on the mode of application of the survey. If any software is used for conducting surveys, it is easy to carry them out. In the case of questionnaires on paper, it is necessary to define that the even questionnaires have one formulation and the odd ones have another (see Figure 5 as an example).

At the time of writing the list experiment options it is important to **avoid two possible effects.** The first is the "ceiling effect". Beyond the social context, list experiments may not get true answers due to the selection of non-sensitive items. In lists with high-prevalence of non-key items, a ceiling effect can cause under-registration; the same situation can occur in lists with non-key items of low prevalence, due to a floor effect (Blair and Imai 2012)[16].

[16] For example, see Colombia's Questionnaire for the Barometer of the Americas, 2016. Available online at: www.vanderbilt.edu/lapop/colombia/ABCol2016-v9.0.5.2-Spa-160802_W.pdf

Limits and feasibility

It requires a good questionnaire design: the items included in the list must be familiar to the respondent, but at the same time we must avoid the mere mention of the substance on which we seek to know the prevalence provokes saying that no substance is used. The questionnaire must necessarily include a direct question on the prevalence of the substance of interest for its contrast with the results of the list. It is under discussion in which contexts it works; for example, it should be less relevant in more liberal contexts, and therefore less sensitive to the effects of social desirability.

It is feasible to be used because it simply involves adding a question in a survey.

Intensive methods

This type of study is part of the interpretative paradigm of social research (CUALSR). This perspective complements the quantitative approaches prevailing in certain areas of the social sciences. Emphasis on the interpretative dimension of practices and discourses, consideration of the historical-experiential context and inductive construction of concepts and theory are aspects that identify this perspective.

The focus group

Relevance and objective

The focus group (hereinafter FG) is a special technique within the broader category of "group interview", the hallmark of which is the explicit use of interaction to produce data that would be less accessible without group interaction, whereas attitudes and views are developed not in isolation but in interaction with other people (García Calvente and Mateo Rodríguez, 2000).

Particularly in the field of drugs, FGs may provide descriptive information on the nature of substance use, individual and group perceptions of the meanings associated with drug use and risky behaviours, data on contextual factors influencing risk reduction and behavioural changes, as well as offering insights on group perceptions and differences (e.g. heroin users living in the same area) with respect to norms and values substance use. They are also useful exploratory methods to obtain information on little-known topics and to help plan and design other information collection and production tools.

One of the advantages that the FG shares with other qualitative methods is to provide information respecting the options and terms used by participants, giving the information a high degree of subjective validity, especially compared to data obtained through closed instruments such as a questionnaire. In this sense, and by keeping to the supplementary nature, the information from focus groups can help to build a questionnaire using the words and categories of the population to which it is addressed, to develop the dimensions to investigate, to generate new study hypotheses and the development of general survey procedures.

Practical aspects of the method

For the **selection of participants,** a series of procedures are used ranging from theoretical sampling (cases and information are added according to the development of the study), the intentional sampling (based on certain characteristics of subjects) or networks sampling (builds chains of subjects that carry on from one subject to another, e.g., *snowball* sampling). It is recommended to build different starting networks (at least three or four of different origin and location) so that people do not know each other and avoid the formation of previous alliances and the elaboration of pre-assembled speeches. The training of each FG should also consider the relevance of segmentation in terms of ethnicity, prejudice structure, patterns of behaviour, gender, political differences, social class, etc., depending on participants to discuss the proposed topics without inhibition and with sufficient confidence to provide their opinion.

The implementation of FG begins with the process of creating different networks of **contacts** (from the ground, off the ground, based on the use of networks of other researchers, direct acquaintances, etc.), which also implies verification of the feasibility of such networks (visits, creation of telephone listings, emails, residential addresses). The preparation of a detailed **invitation letter,** its personalised delivery, and confirmation and reminder, will strengthen the guest's motivation to attend the work session. Incentives or facilities can be offered to participants, though never money.

Once the group of people who will make up the FG is established, the session will be carried out. We must remember that not any group which dialogues is a FG, but only one that represents a space of semi-directed dialogue where the interaction is mediated by a thematic pattern of questions that delimits and guides the dialogue (Sepúlveda and Perez, 2015). The session should last **between 60 and 90 minutes** and it is suggested that the number of **participants** be between five and ten, for which to follow an over-selection criterion attentive to possible absences.

The **moderator** introduces himself and so does the **observer,** who is in charge of taking notes on the development of the conversation from the point of view of the thematic axes, and of meaningful words or phrases, among others.

The moderator ensures that the group is transformed into a group oriented to dialogue around the proposed topics and questions. The moderator represents and exercises control: he/she gives turn of the word, lets the silent speak, reorients the dialogue when it is to be done and interrupts, amicably, the one speaking for too long.

The FG, like the semi-structured interview, works with **a guide or question guide** so that the group does not get lost (drifts) and ends up looking for its own conversational destination. The guideline allows talking inside a thematic axis to allow the establishments of meanings and the emergence of the new or unexpected ones, but reorients if the group tries to ramble in other ways (Gil Flores, 2013). This guideline proposes at the beginning general topics and questions to progressively set out more precise and narrow topics and questions. The number of questions is restricted as more time is given for interaction and thematic depth and less for extensive treatment or detail of the subject. The protocol or guide of the FG should consider in its elaboration the following emphasis on questions (Gil Flores, 2013): they should **drive (provoke)**

a conversation among all and not a question-answer-based communication as individual appeal, they should be formulated in plain language and style and be relevant to **the socio-cultural identity of the group**, and should be formulated on the basis of **a single thematic axis at a time.**

Once the moderator has gone through all the points of the guideline and delved into the issues that constitute it, he/she can **finalise** the group. The participating observer of the focus group must submit a written report with the record of what he/she observed. It must also include a description of the group's previous contingencies, their development and completion. Recording must be digital on any device and guarantee multiple copies. The **transcription,** on the other hand, must be literal to the orality present in the audio, contemplating distinction of speakers according to identification codes (real or fictitious name).

II. Complementary methodological devices: oriented towards the empowerment of NDOs

Intensive methods

Expert panel

Relevance and objective

An expert panel (hereinafter EP) is a set of meetings in which different people considered suitable for their academic, scientific, consultancy or life experience, form a working group contributing a series of arguments or opinions on an axis of consultation, which is usually a specific study, of which they have been previously and duly informed, with the aim of establishing consensus, dissent and critical reflections (Sepúlveda and Pérez, 2015). Expert status concerns not only social scientists, consultants and academics in the field of drugs and public health, but also qualified informants who, by virtue of their history, knowledge, experiences and contextual and situational proximity, can be summoned as connoisseurs of drug-acquisition and use practices, as well as the associated sociocultural imaginary.

The relevance of EPs lies in enabling communication and reflection on possible changes in consumption patterns (news, trends, outbreaks, emerging risks and potential harm, etc.) based on scientific evidence and empirical evidence available in this regard. This method also contributes to the theoretical validation of a set of findings, the systematisation of consensus and dissent regarding the meaning and sense of the data, the deepening of triangulation dynamics, and the prospective construction of action and development scenarios for the short- and medium-term problems.

Practical aspects of the method

The EP method is widely used in the field of evaluative research. Its development has involved the diversification of a set of techniques such as multi-criteria analyses, "DELPHY" approaches and countless crossovers and derivations between them (Sepúlveda and Pérez, 2015). For practical purposes, we will describe the series of steps that constitute a broad operational configuration, to take into account in its design and management.

The **selection criteria for experts** are: experience, collective work, independence, and balance. They are people whose quality as an expert is recognised by the community of which they are part. We suggest a setup that includes actors from scientific-academic, community, consultancy, and political-institutional **backgrounds** (Sepúlveda and Pérez, 2015). For its part, the capacity for **collective** work is a requirement that must be indicated in the formal invitation to the panel and be emphasised as a functional requirement for its proper functioning. Independence, on the other hand, makes mention that they are not convened as representatives of an institution but in a personal capacity. Finally, conveners should take into account the **balance** of disciplinary, theoretical, technical, sociocultural and political positions within the group, safeguarding the plurality of opinions and generating a space where consensus and dissent emerge naturally.

It is recommended to list **experts** by scope and space. For example, researchers in drug dependence, recognised users in the study spaces (both because of their age and for, for example, their participation in cannabis culture, etc.), researchers in youth cultures or safety, social interventionists in socio-sanitary issues, etc. The **call** can be made in three ways: as a remunerated participation, as non- remunerated invitation motivated by their incorporation into the credits as a collaborator, or as a partially remunerated or honourable invitation.

Once the list has been made and the experts have agreed to participate in the agreed dates, the teams will have one month to formally complete the **invitations** and send the dossier with: the design of the study and the results obtained if applicable), background, the guideline that will guide the work of the experts, the scheduling with the days and times of the meetings, the mode of work and the products to be achieved. Experts will have two weeks to read and respond in writing to the guideline provided to them, so that they can attend meetings with complete information and a formed opinion. Reading the **dossier** contextualises the expert's opinion. This reading is guided by a **guideline of questions** that gathers certain thematic tracks and which, together with its written answer, will be the first product of the expert. This response will be circulated among all members. This **feedback among the members of an EP** that still remain in anonymity forms the second reading in which the expert is compromised, because they will know the opinions of the other participants and can deepen, develop and/or complement their own opinion. Each expert will be asked to prepare a small note to be exposed on the day of the meeting in order to shorten exposure times.

The **number of meetings** is variable (between 2 and 5). At the **first meeting** all participants meet for the first time. The arrangement of work is usually done through short and general rounds of exhibitions, and then beginning a topic discussion by result and/or proposed topic. The first meeting is recorded, transcribed in full, systematised, and then returned to the panel members for reading. Participants are requested to prepare another note for the next session with their final opinion and a projection towards the construction of conclusions and suggestions. The second **meeting** proceeds with the presentation of the minutes to move to a final discussion on the results and how they can help draw meaningful conclusions and/or suggestions for intervention. It should be reminded that **the discussions of the EP are confidential,** and participants cannot openly disclose the results or reflections established before the final and formal presentation of the study.

The **product of the EP** consists of a document that collects and systematises the arguments of the experts establishing their convergences and divergences in order to improve the rereading of the results and aim to build conclusions and more developed suggestions. This process concludes in a general validation of the consultation.

Micro-ethnography

When we talk about qualitative approaches, the methodology par excellence is ethnography, which, in summary, consists of the development of an intense and continuous interaction with the group studied in its daily environment. It allows a deep, structural knowledge of the phenomena studied.

According to Spradley (1980), based on the complexity of the social unit studied, a continuum is established between macro-ethnography, which pursue the description and interpretation of complex societies, even micro-ethnography, whose social unit is given by a particular social situation. The micro-ethnographic perspective focuses on the study of certain situations and social problems, very limited temporally and spatially (a single institution or social area), rather than on the global description of the culture and society in reference. In this option, research deserves little time and can be developed by a single researcher or ethnographer (Spradley, 1980).[17]

Relevance and objective

Ethnography is a tool to study and understand a culture, the way of life of a group, that is, its ideas, beliefs, values and assumptions, its behaviours and the things they do (Ogbu, Sato and Kim,1988: 48). Doing ethnography essentially involves a certain kind of intellectual effort in terms of "dense description", which contemplates building meanings through which individuals act in social reality, give it meaning and make it intelligible.

In the field of drugs, ethnographic research on the use of psychoactive substances began in the 1930s (Page and Singer, 2010). After long decades of informal work, ethnography is now a central method of social research in this field, whose relevance is based both strategically and tactically. Strategically, this perspective owes to a long tradition of drug studies and therefore attempts to solve certain epistemological and methodological limitations long reported in that field. Tactically, given the focused and limited nature that characterises it, it will behave as a device sensitive to contingencies and changes experienced in the field of drugs.

[17] Examples of application of this limited perspective of the ethnographic approach can be looked for in works carried out by some NDOs in the CELAC countries (for example, Chile and Uruguay) to study the consumption of synthetic drugs in contexts of party and youth leisure.

Practical aspects of the method

Delimiting the field is the first phase in the implementation of the ethnographic process and contemplates the choice of a delimited and observable community (scene, circuit, etc.) and the drafting of the project. Being able to achieve an adequate demarcation of the field operates as a condition of possibility for targeted action. It is highly likely that a first demarcation of the field will come predefined in the original demand of the study. However, the novel or emerging nature of the phenomenon or object of study will imply that the delimitation of the field formulated in the demand is diffuse and imprecise, so it is advisable that the research team set a "zero or prospective phase" with which to be able to redefine demand and adjust the delimitation of the field.

In this **"zero or prospective phase"** it is advisable to contrast and/or enrich the original delimitation proposed in the demand, as well as be able to review, and if necessary, reformulate the design of the study. The following techniques are recommended for this purpose: initial consultation (from focus groups or, in addition, open interviews with key informants), mapping (to obtain a graphical representation of the space corresponding to the possible universe of observation), and typologies (elaboration of ideal typological tables of communities, groups or individuals). Based on this reformulation, an **operational** project is **drafted,** which, as it is not based on knowledge of experiential reality, its formulation has a temporary and dynamic character. In turn, this phase includes the development and validation of observation and registration **tools,** as well as the guidelines for individual and/or group interviews.

Documentation of micro-ethnography involves analysis of documentary and oral sources (interviews with key informants). According to the project formulated the file to be obtained can vary significantly, so it will not be predefined by a type of canonical sources (indexed literature, grey literature and institutional documents), but can incorporate non-sources *(*flyers, websites, fanzines, applications, etc.).

Field work phase is central, and widely documented in methodological literature. The question of **how to enter the field** - which involves both methodological and ethical aspects - has no easy resolution and can take significant time. We propose three basic conditions to be able to quickly overcome this problem: **proximity** of field researchers to the problem studied; **availability** or high feasibility to have door-openers; and ***know-how*** in the drug research field.

Based on field delimitation and preparation (with its maps, typological charts and analysis of secondary sources), you are in a position to **define a sample,** which will be qualitative indicative of a theoretical or typological type and of an intentional character.

Participatory observation is the main **data collection technique used,** although interviews are also widely used. The data generated by these two techniques are often supplemented by other documents such as narratives, life stories, artefacts or diagrams produced by the investigated group. The **recording of the information** is done through focused observation record sheets, interview audios and field journals, in which must be added not only the set of field notes, photographic records, recording informal conversations, among other techniques, but the elaboration of a narrative containing the dense and/or analytical description of the space studied.

Finally, the **analysis** of the data built in the ethnographic process involves the following activities: information sorting, systematisation, analysis, report writing, and field output.

Ethnographic mapping

Relevance and objective

A map is a graphical representation that exposes complex information to locate the relative distribution of parts of a whole. They condense a series of information into a single document, so they serve to quickly visualise different aspects related to the reality of a geographical and relational context (Sepúlveda, Montenegro, Báez, 2008).

Mapping, in the case of a territory or locality, basically consists of characterising the physical space of the neighbourhood or community in which the researched consumption practices are located. In the case of a scene and/or circuit, it will consist of characterising the spatial and synchronous dimension of the events, as well as the diachronic morphology associated with their cyclical temporality (preparation, beginning, development, completion and drift). This method includes knowing the social dynamics present in the different areas and times to be able to have an approximation to the market and consumption practices that occur in the different spaces. It is about getting to know the social space, understood as the group of distances and social proximities that commands coexistence and through which cultural geographies are produced and re-produced. For this purpose, two methods of inquiry can be implemented: participating observation and drifts.

Practical aspects of the method: participating observation

This technique involves sharing physical space with participants of the spaces under study. It is a way of recording people's daily activities and its fundamental goal is to gain a first-hand understanding of the meanings and contexts of behaviours. In addition, it provides useful descriptive information to assess how and why certain behaviours occur and its influences in specific environments, as well as to investigate the contextual factors that influence the feasibility and implementation of interventions (Sepulveda, Montenegro, Báez, 2008).

First, an updated map of the area in which the different areas of the territory and other relevant information are (location of local administrations, implemented services, transport networks, associations, etc.) must be obtained. In the case of territories, obtaining these maps does not present any greater difficulty: they can be obtained through commonly used search engines and if necessary, it can be requested from the respective local administrations. The situation will be very different if what you want to map corresponds to scenes and circuits. In such a case, the initial map does not pre-exist and should therefore be drawn up in the "zero phase" of the mapping. In this case it is recommended to follow the indications and procedures described in relation to the "preparation phase" of the micro-ethnographic process. Once the initial map is built, the observations are planned in quantity and tours, according to the objectives of the study, having to cover the entire area and take into account different time slots. The walk of observations involves first walking around the area in a careful attitude to capture the different

social dynamics present: in what public places there are groups and what characteristics they have, if they are in drug use activities, less-used or transited areas, at what times dynamics occur, etc. During observations it may be advisable to make contact with people in the different spaces to gather relevant information about the social dynamics that are occurring at the time of observation.

Observations must be systematised through the "field journal". It is very important to keep a complete record as different elements may be relevant at different times of the inquiry. From the systematisation of the material, the team can decide whether it is necessary to expand the areas or observation times, repeat some routes or expand the information collected through other research techniques. Finally, to map the territory, a classification must be systematised on the map previously collected in terms of geographical location of the observed, physical elements present, social function, participants and practices. The analysis must also be fed on the sensations, thoughts and impressions that the observer has had.

Practical aspects of the method: the drift

This technique involves touring the territory or circuit, accompanied ("by the hand") by a key person in the environment (some drug user, a member of the neighbourhood association, etc.) Here, the map of the territory is created from the experiences of those who live or work in it, since the drifts follow the trajectories proposed by the informants. It can be used in conjunction with participating observations (Sepúlveda et. al, 2008).

Again, the first step is to get an updated map of the area. To choose the key people with whom to make the drifts you must have a minimum knowledge of the social fabric of the area, the groups of users who frequent the area, etc. It is important that a tour for the drift is planned even if it may change based on the conversation that is held during the process. It is nodal in this method to walk together with the person (who has been explained the objective and methodology of the study) and at the same time go asking the meanings that the different sites through which they are transited have for him/her. This technique is especially useful for associating people's lived experiences with the geographic spaces in which they take place, so that the conversation held during the drift must be recorded. In the systematisation of the results, maps should be made that contain the most important elements of the conversations held, and then see what are the meanings that people have in common about the different places that have been transited, as well as highlighting the differences.

Indirect extensive methods

External analysis I: urine, hair and wastewater analisys

Relevance and objective

These indirect measurements can detect substance use, not from the statements of individuals, but through traces left by this consumption. The main objective of these methods is to detect the appearance of NPS, as well as the undeclared consumption of already known substances,

since, by not requiring contact with users, any under-reporting or non-reporting effects are avoided. Below, we will introduce three of the most commonly used techniques: urine, hair, and sewage analyses.

Practical aspects of the method: urine analysis

Urine testing is one of the longest-standing techniques in the detection of drug use, although in mainly therapeutic contexts or monitoring of under-control populations. It is a good estimator for epidemiological research but with intrinsic limits. The main limitation is the practical complexity in collecting samples. These analyses require specific logistics - permits, special storage, healthcare - which must be highly supervised avoiding contaminations that impact the chances of false positive detection. It is recommended to use specific tamper-proof containers and to conduct testing and sample collection practices to ensure efficiency in procedures. Samples can be obtained at different locations such as night parties, music festivals, educational centres or public parks through "gathering points" where toilets or urinals are installed (which usually do not use water to prevent contamination samples) with a deposit from which the samples are extracted. The analyses can be carried out in such places or subsequently taken to laboratories, although in the first case a more expensive logistics is required but with faster results. Sample selection can be defined continuously by collecting all samples from a toilet, or by defining a selection mechanism (for example, the third of every three samples). Certain prior analyses should be performed to ensure that all samples are valid, for example, samples with low creatinine content should be replaced, as they are considered diluted.

The second major limitation is that the screening window of substances is shorter than that of other techniques, such as hair analysis. In general, the samples will contain the most information within the first six hours of collection, although it varies depending on the substance[18]. In addition, the results are influenced by various factors: the type of drug, the physical characteristics of the person, the route of administration, the dose and frequency of use.

Practical aspects of the method: hair analysis

Hair testing is also often used to detect drug use that is not reported through other methods, or adulterant substances present in drugs of use[19]. Among its advantages is that collection is less invasive and shameful than in the case of urine, and that its storage possibilities are higher since it does not require sophisticated infrastructure. In addition, the consumption detection window is higher in hair samples than in urine and blood samples. It is important that the extracted sample is the appropriate length and that the samples are washed correctly to rule out the hypothesis that the person has not used the substance but is in the hair due to contamination through particles, steam, smoke, etc. This type of analysis has been carried out with different

[18] For example, opiates can be detected 2 or 4 days after consumption, while cannabis can be detected up to 4 weeks later.

[19] An example of this application can be the study carried out by the NDO of Brazil in 50 hair samples selected from "crack" users to know its chemical composition, published in the sub-regional compendium of the "Chemical Characterisation Analysis of Smoking Cocaine" (CICAD-OAS, 2016a)

objectives in different populations: new-born hair samples or maternal public hair to control drug use during pregnancy, samples of university students or extracted from hairdressers to detect drug use and NPS, samples of patients being treated for adulterants, samples of people deprived of liberty, or forensic analysis.

Practical aspects of the method: wastewater analysis

The study of the prevalence of use through wastewater is useful as a complement to other direct or indirect techniques, since there is correspondence between the quantities used by a population and those estimated through waste (Zuccato et al, 2008). The virtue of this method is that it allows to estimate epidemiological aspects almost in real time and with some accessibility. It is also less invasive than the above methods, since sample collection does not require direct treatment with people. Its main limitations relate to the lack of extra information about the user profile (a limitation shared by most indirect methods), the cost of its realisation and the dependence on the reagents used to find substances (you need to know which substance you are looking for to plan which reagent to use and that limits the ability to find NPS).

Limits and feasibility

These methods do not allow for estimation of prevalence, since the number of cases that enter the calculation is not always controlled. In any case, they are suitable for knowing the presence of substances.

In practical terms, access to samples is not easy. Proper logistics and important operational work is required to collect the material. Its analysis also requires a high technical knowledge and special equipment, such as reagents to detect substances. For these reasons, these techniques can be costly. In addition, they generally require coordinating work with third parties who will allow the necessary samples to be obtained.

The results of these measurements, most of the time, are aggregated. If the purpose of the research is to know the individual characteristics of users not all of these techniques are adequate, so their consistent application will depend on the design and objectives of the study.

External analysis II: the use of the internet as a source of information

Relevance and objective

These sources of information are especially valuable for studying population groups of young people, because they are the most active users of social networks and the internet and their *digital print* might result more informative. Its complementary nature with respect to traditional methodologies is that information can be accessed more quickly, and because they are associated with proactive behaviours of individuals (search for information or participation in networks) they do not suffer from statement biases as in other methodologies (Kazemi et al,

2017). Regarding drug use, analysis from these methods is especially useful for the detection of NPS, and consumption patterns[20].

Information regarding internet behaviour has increased the volume of data with which it is possible to work. This is what is generally known as *big data,* which can be associated with any type of information that complies with what Menasalvas et al. (2013) identify as the "Vs" of *big data:* volume, velocity, variety, veracity and value of the data. One of the most important distinctions in working with these bases, is to know whether they are structured or unstructured data: those that allow their storage, consultation, and manipulation through computer programmes (clinical histories, readings devices, etc.), or non-systematic, unordered and often non-digitised information (medical notes, income records, etc.). In general, the use of structured databases is suggested, which may require prior work to clean up and structure information but will facilitate the analysis and modelling that is performed. It is also relevant to move towards the construction of interconnected databases, as it allows triangulation between various sources of information and enriches the analysis.

Practical aspects of the method

Working with large databases involves the development of special techniques. As follows we describe *web-scrapping* and using search engines as techniques to collect information, and data mining as a technique for data analysis.

Web-scrapping is a technique that allows to collect information in an automated way from a website. Its main advantage is the obtention of large volumes of information, systematically and quickly, which would be almost impossible to extract manually (Lopez, 2018). This technique requires researchers to analyse the structure of the website from which the information is to be downloaded, use a certain query code and download it, and design the structure of the database. Different programming languages can be used to perform *web-scrapping,* such as Python or *R,* or even the Google *Chrome* browser extension called *Web Scrapper*[21].

Another information collection technique is the use of internet **search engines** like *Google.* It is about relaying searches on specific terms on the Internet, using web applications that allow to observe and measure the terms, location, and frequency of their search. The literature confirms that this method is useful as a source of external validation (Steppan et al, 2013). The most notorious example is through the *Google* search engine, although a more complex application is the Google *Search Indices* (GSI), which determines the probability that a term will be searched in a certain geography. One of the virtues of this method is that it is not subject to non-response or under-estimation biases since, like the rest of the indirect methods, it is not based on

[20] Egan et al. (2011) use the social network *Facebook* to analyse the alcohol consumption among male university students: from a content analysis of 225 profiles, they detected a very high prevalence of alcohol consumption similar to that reported by other sources. Hanson et al. (2013) analyse the mention of "Adderall", a pharmacological drug for the treatment of hyperactivity disorders typically consumed as a stimulant among university students, in 213,633 tweets, finding that its mention increased during exam periods, that its consumption was associated with alcohol and that some of its secondary symptoms had to do with lack of sleep and/or appetite. For more references, see Kazemi et al. (2017).
[21] Available at https://webscraper.io/.

reporting by the user. In addition, the current high rates of internet access mean that in general this method in general does not under/over-represent different age, geographical or socio-economic groups.

There is evidence of the usefulness of this technique. For example, Perdue et al. (2018) demonstrate the correlation between the results of the "Monitoring the Future" survey in the United States and trends in *Google* drug searches, suggesting that this tool may work as a proxy for drug prevalence estimates from traditional methods[22]. Among the main virtues of this technique are the simplicity in data collection, using the *Google Trends*[23] website, which is also free, and the possibility to obtain information almost in time real.

Moreover, *Data Mining*- is a form of approach to large databases, consisting of the extraction of useful, valid and understandable information from large volumes of data. This analysis technique is especially useful for making predictions from attributes in related variables, as well as for identifying patterns between data (Menasalvas et al., 2013). This analysis requires certain steps: the understanding and preparation of the data –Data *Cleaning*–, where the researcher analyses the data obtained regarding its quality, usefulness and processing possibilities[24]; modelling, from which various computational techniques are applied for the processing of information, for example, *machine learning* techniques or analysis from algorithms; and, finally, the choice and evaluation of the model (Han, 2006; Menasalvas et al., 2013).

Data mining can also be applied using various sources of information as input. As seen, one example is information from social media interactions. Yakushev and Mityagin (2014) combine sociodemographic information at the macro level (geographical regions), with information at the micro (individual) level, on drug interest in predicting the number of people with varying degrees of addiction in Russia. In the latter case, they use data obtained from APIs of different social networks. The results indicate that the aggregated data is useful for detecting severe addictions, but social media makes it possible to distinguish addictions at earlier stages. Their findings show how integrating various sources of information, with data at different levels of aggregation, can result in more comprehensive analyses. In addition, data mining can also be used with information produced through traditional methods[25].

Limits and feasibility

If the goal is the estimation of prevalence, these techniques have the limitation that individuals can search or *post* drugs on social networks without necessarily being consumers, having to

[22] Steppan et al. (2013) use internet search to observe cannabis use, taking into account the Google Search Volume Indices and using terms related to cannabis (marijuana, hashish, THC, etc.). By comparing it with the prevalence estimates obtained with a survey of students, the indicator appears reliable and stable over time and, although it is not useful as a consumer predictor, it is a valid complementary source.

[23] https://www.google.com/trends/

[24] Han (2006) stresses in this process the importance of handling lost values and irrelevant attributes, which can hinder the work with the data.

[25] For example, Jimenez et al. (2018) use data mining techniques (machine learning and statistical techniques) to understand the motivations behind the consumption of alcohol, tobacco, cannabis and cocaine in adolescents and predict it. They use an anonymous questionnaire as a source of data with which they obtain 9,300 responses, and detect that considering the use of drugs as a "recreational activity" and the presence of "consumer friends" are the factors most related to drug consumption.

contemplate this limitation in design and the definition of objectives. Sentiment analysis techniques can contribute in this direction.

In terms of work management, these methods are intensive in highly skilled human resources, particularly those that require computational analysis. They require important technical specificities, not only in relation to human resources, but also to the infrastructure for such work. Specifically, computers with high processing speed and sufficient storage space are needed, even in the cloud. These features should be particularly taken into account when acquiring technology, as they exceed the capabilities of traditional equipment. For this reason, many of these techniques have a high economic cost.

Direct extensive methods

Capture-recapture

Relevance and objective

Over the past few decades, information systems have accumulated a large number of drug prevalence studies that have allowed to know the evolution of the use of different drugs, as well as the main factors that affect it. However, the available information is based on surveys whose sample design, for the most part, seeks to be representative at the national level, and therefore does not allow to estimate the prevalence of use in small geographical areas. It is important to appeal to methods that allow us to know the prevalence of drugs at the local level, for which we can combine the use of different sources of drug use prevalence data using the so-called "capture-recapture" method.

Besides, in addition to the estimation of prevalence, the capture-recapture method is useful for calculating mortality associated with drug use.

Practical aspects of the method

This method was originally developed by the natural sciences to estimate the size of free animal populations (Petersen, 1896).[10]

[10] It consists of capturing a sample of animals in a certain space, tagging and releasing them, then extracting another sample and counting how many tagged and untagged animals there are. This second sample allows to know how many animals are in the two samples, and what is the proportion of animals found in the two samples on animals that are only in the second sample. If the assumption is made that the proportion of animals caught and not caught in the first sample is the same as that found in the second sample, the size of the total population of those animals is calculated by multiplying the number of the first sample by the invert of the relationship. The total population (P) is estimated through the following formula:

$$P = M2 * (M1 / R)$$

Despite its origin, it is increasingly used to calculate prevalence of drug use[26]. McKeganey et al. (1999) define some key steps in the application of this method to estimate the prevalence of drugs in small locations. For this, we will not select samples but we must look for several data sources with drug users: the first step is to find at least two sources of prevalence data that are independent of each other. Sources of information may include: treatment services, medical services that record drug use, records of police arrests, as well as data extracted from traffic police with records of people with positive driving tests under the effects of drug use, among others.

The second step is to access those databases. The units that collected the data may be suspicious of the use they will be given, so it is essential to ensure confidentiality in their use. This concern is often important because the method requires registering some identifiers of individuals, since otherwise it would not be possible to know which individuals are in more than one data source (recapture), and from that number calculate the total population. The identifiers that are often used are the initials of the first and last name, the date of birth and the sex, so that the recapture can be identified but not the people.

The third step includes cleaning the database paying close attention to cases that have lost values, for example, those where the date of birth is missing or some other identifier, as this may impact the non-identification of cases in the recapture or generate errors in the data matching process that leads to incorrect estimates. When the database is considered to be analysed, individuals appearing in more than one source are identified and information is organised into a table, identifying the overlaps of individuals in different samples or sources. Finally, statistical programmes are used to calculate drug prevalence estimations based on different models.

Limits and feasibility

The main limitations of this method relate to the possible violation of the assumptions on which it is based: a) the non-relationship between sources of information, i.e. that an individual's likelihood of being present at a source does not affect the probability of being present in another; b) the size of the population is fixed, there are no individuals leaving the group during the study period and no new additions; and c) those individuals who are in more than one source are correctly identified as such. In most research using this method to estimate drug prevalence, assumptions of non-relationship between sources (a) and fixed population size (b) may not be met. The problem when assumptions are not met is that they can generate inadequate

With M2 being the total number of animals labelled in the second sample, M1 being the number of animals labelled in the first sample, and R being the number of animals labelled in the first sample and recaptured in the second.

[26] As background, Hartnoll et al. (1985) estimated the prevalence of opioids in London, based on the number of people attending a rehabilitation clinic and those who have passed through a hospital to treat infectious diseases because of their drug consumption. By comparison, it was concluded that 20% of the hospital sample had also been treated in the clinic, allowing the total number of users to be estimated as five times the number of those attending the clinic. Another recent example is the work of Raag et al (2019), where they use this method to estimate whether the number of people who inject drugs in Estonia effectively decreased between 2010 and 2015.

estimates. One solution is to expand the number of sources to use, although it may also be recommended to reduce the number of sources when they are too interconnected, joining some of them.

Feasibility depends, first, on the existence of drug data sources, especially at the local level. There needs to be services and actors that collect information that can be used as a data source. Second, it also depends on whether these services, agencies or actors share their databases. For this reason, it is important to work on the relationship with counterparties and ensure the confidential use of the information.

Mixed methods

RDS (Responden Driven Sample)

Relevance and objective

This type of sampling is carried out in studies that aim to relieve "hidden populations" such as drug users who also belong to populations that are difficult to access because of their vulnerability, because they are identified as minorities, or because they perform practices with very low social acceptance and which would therefore not be easily reported. The RDS method combines the "snowball" technique (in which a participant is asked to recruit other participants) with a weighting system that compensates for the non-random nature of the sample. Originally developed by Douglas Heckathorn (1997), this method is considered an excellent sampling alternative for those hard-to-reach populations.

This method allows access to so-called "hidden" populations, which because they do not have the required sample framework or by factors linked to social desirability are not easily accessible from estimates from the traditional survey method. Access to them will then allow to know by structured interviews their practices and use habits, the modes of access to the substance, the effects of the substance, the price and the link with the illegality of the interviewees, among other topics. The relevance lies in collecting information from users who would not otherwise be able to access. The RDS method ensures greater conditions of confidentiality and privacy so that people can give information about their use behaviour, as it is the respondents themselves who are looking to participate in the study.

Practical aspects of the method

In order to function properly, the RDS method requires sampled individuals to conform to a social network: they must know and interact with each other. The **formative** stage of research is essential to confirm or refute whether users of the substance of interest actually compose social networks. If a network exists, then RDS can be performed.

The success of the study depends on the ability of participants to be able to recruit other participants, so the **first sampling of participants** - commonly called "seeds"- requires careful selection. To begin with, a number of seeds, for example five, are defined to ensure sufficient

variation in terms of socioeconomic conditions, age, gender and consumption patterns of the substance.

Another defining feature of the RDS method is its **incentive structure** for participation and recruitment. Participants are offered primary and secondary incentives. Primary incentives (to complete the interview) are granted immediately after the completion of the personal interview, while the secondary (for recruiting new participants) are delivered once the participation of the new recruits is made effective. Each participant receives coupons, the number may vary, to contact new participants. Each coupon had a unique code identifier to indicate the recruiter and allow identification of strings created from each seed. Of course, not all participants contact the number of participants for which they have coupons. Sampling depends on the success of each seed.[27]

Limits and feasibility

The study population has to function as a network. This is why the formative stage is fundamental and it must be invested in its realisation. Only if users make up a network, an RDS can be performed. To do this, researchers must start by contacting known users of the substance, from whom the network is started.

It is costly because it includes economic stimulus to the participation and recruitment of new cases. Economic incentives have to work as such for most users. For this reason, they cannot be very low because cases of higher socioeconomic status would be lost. It is recommended not to give the economic incentive in cash for ethical reasons, or to prevent it from being used in directly in the purchase of the substance. It is better to give a card with money to be used in established shops.

In narrowed territories it is feasible to be used because user networks are often easily identified. It is necessary to have at least one month for the realisation of the fieldwork, since the speed at which the sample is formed does not depend on the researchers, as in other methods where it is the result of more or less surveyors doing the surveys, but how quickly the interviewees themselves contact their networks and those new contacts communicate with the research team.

III. Exploratory methodological devices: oriented to knowledge of emerging problems

Intensive methods

Discussion group

[27] As an example, the study carried out by the Uruguayan Drug Observatory "Fisuras. Dos estudios sobre pasta base de cocaína en el Uruguay" (Suárez et.al., 2014).

Relevance and objective

The discussion group (hereinafter DG) focuses on the production of discursive consensuses through the call for different social subjects who, by virtue of their specific sociocultural and structural characteristics, are invited to dialogue on a particular topic (Sepúlveda and Pérez, 2015). It provides descriptive information about individual and group perceptions associated with drug use, risky behaviours, attitudes toward drug users' care devices, and data on contextual factors influencing patterns use. As an exploratory method, it is useful for information on topics that are little known and to help plan and design future research.

Practical aspects of the method

The **definition of the collective** of persons on which the participants will be selected is one of the first decisions of the method. The collective involves a set of structuring dimensions (historical, socio-spatial, psychic, identity and contextual) that identify the subjects under study and that are the ones of interest to highlight to start the process of selecting and contacting the participants. The **reference group** is one that, as part of the collective, is selected to participate by virtue of its characteristics, accessibility, availability of time, ability to communicate and acceptance to participate. This group must be set up according to a balance of symbolic and real powers among its members, given by the weight assigned to different dimensions (socioeconomic level, age, gender, etc.). The **composition of the group** follows the established sampling criteria[28], and ranges **from five to ten guests** (ideally seven).

The **preceptor** proposes the topic of conversation, usually referred to as "provocation". Unlike the moderator in the focus group, the preceptor does not give the right to speak, does not speak to the silent, does not take control of speaking times. Its role is symbolic, appearing as a figure of power that must be displaced so that the group conforms as such and goes on to dialogue with the goal of producing discursive consensus.

The **duration of the meeting** varies between one and two hours, and its **realisation** presents aspects or phases that we will present in a schematic way, ascribing it to an orthodox view of the technique (Sepúlveda and Pérez, 2015). First, participants are **recruited** by a study team manager or entrusted to specialised personnel who have varied and feasible networks of contacts (personal, professional or acquaintances). The recruiter must generate a direct link to the guests, and a list with the contact details. The **invitation,** formal and hand-delivered, must indicate the information of the place of performance, and includes some "hook" aspects for participation (offering of a *cocktail,* for example). In some cases, there is often an economic incentive - never money. Participants must not have pre-existing relationships, as the group cannot pre-exist at the time of event production. The team in charge of producing and carrying out the DG should be clear about the dynamics of the execution of the **technique.** From the

[28] Ibanez (1979) points to structural *representativeness* as opposed to statistical representativeness. Thus, structural sampling refers to the (intentional) search for subjects who meet certain characteristics that make them representative of a reality in reference. However, the formation of a GD requires a balance between homogeneity and heterogeneity of the guests: if the group has overly homogeneous characteristics there is a gain in group identification (group meanings) but a loss in diversity and difference (meanings of information); if there is too much heterogeneity there is no possibility of verbal interaction that tends towards a consensus.

initial silence it moves to a situation where the group decides to respond to the provocation. As an example of provocation:

> *Good afternoon. Before starting the session, I wanted to thank you for being here. We have invited you to talk and reflect on the topic of marijuana use. We are conducting a social investigation on this subject and, for this purpose, we are conducting a series of conversations like this. The idea is that you have dialogue, from the perspective you see fit. Your reflections on this topic is of the utmost importance for the study and from now on we are grateful for your participation*

As can be seen, the way provocation is presented is general and avoids any attribution or negative connotation. This framing leaves open the possibility that the subjects can articulate, from the place, their reflection and opinion. Below is a schematic of a DG as "action and reaction" movements (Sepúlveda and Pérez, 2015).

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Action by the Preceptor	Expected reaction in the group
Introduction of the provocation	Setting expectations. Demand through directivity: ask questions, assign turns. Crossing gazes and the preceptor arise, bewilderment, sometimes anger. The preceptor is observed to reposition the conversation topic and return to silence.
Reception by the group. The Moment of Silence	Silence incites the group to speak to escape awkwardness
The start of the conversation	The breaking of silence usually is directed back towards the preceptor figure. The preceptor can only return to the group what is queried and reposition the topic of conversation.
Structuring the group through speech	The group, in the face of the preceptor's permanent withdrawal, decides to install speech. The preceptor remains active only as listener.
Development of the conversation	There is a conversation in which processes of recognition (what I say in the group), coupling (what I said in the group is assumed by it) and difference (that which I said as something of its own and distinctive) converge.
Closure. Detection of consensus and divergences	The group unleashes its opinion, converges and continually diverges. A moment when it makes sense to everyone or most of them to sit there talking about something. The preceptor breaks his/her silence and announces the end of the conversation.

Mixed methods

Trendspotter

Relevance and objective

The Trendspotter method, which is primarily exploratory in scope, is suitable for addressing issues on which there is a considerable degree of uncertainty but for which signs or indications of presence, magnitude or potential harm to health appear from multiple sources. Such signals, when they present certain coherence, may be a first picture of new trends or emerging phenomena. This strategy also implies speed in the collection and dissemination of information (it takes about five months) and is characterized by appealing to triangulation strategies in all their phases, compensating for deficiencies in individual methods, and/or providing stronger inferences. Finally, it allows the incorporation of the perspective of non-research **actors,** such as health workers, students, drug users, etc.

Practical aspects of the method

A Trendspotter study involves four key phases: planning, application of exploratory methods, expert meeting and report-writing. The main objective of the **planning** process is to define the framework of the study. Such initial assembly requires decisions regarding the definition of the object of study (selection of subjects, rationalization and definition of questions and objectives), the selection of methods, the design of the research team (profiles, roles and responsibilities), and the selection of the expert group. For this instance, it is recommended to use **planning** forms for the purpose of sharing agreements, ensuring proper follow-up, and keeping a thorough record[11]. It is essential to devote the necessary time to the identification and careful definition of the subject to be **addressed.** To choose it, it is essential to review relevant contextual signs that have been collected from various sources (routine data, EWS, scientific articles, expert networks, media monitoring, etc.) [12].

The **selection of the expert group** is one of the most important milestones in the assembly of the study framework. A strong point of Trendspotter methodology is its ability to combine scientific literature with expert opinions collected in a structured manner. The identification of these experts should start from the beginning of the study, ensuring a rich combination of different experiences, perspectives and observations to ensure complete and multi-layered results. The discussion about the experts to be invited must be continuous in order to identify topics or vacant angles, opening up the possibility of inviting new experts. In optimal terms, between 10 and 15 people should be selected according to the following criteria: they can provide substantial information (researchers, frontline workers, drug users, journalists, etc.),

[11] In the annexes to the *Trendspotter manual: a handbook for the rapid assessment of emerging drug-related trends* (EMCDDA, 2018) possible models of these planning forms are found.

[12] Some examples, given by the *Trendspotter* studies of the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), are: regional heroin shortage, patterns of associated use and harm, new trends in methamphetamines, Internet drug markets fentanyl-related deaths, new developments in the MDMA market, and high-risk drug and drug use of NPS (EMCDDA , 2018).

they have a variety of backgrounds and experiences, and have as direct an engagement as possible with the subject.

For the **first stage of data** collection, a core of pre-set methods is recommended - review of literature and statistics available, and online survey of experts - to be implemented in all studies, although additional methods such as population-specific surveys, social media monitoring, interviews, etc. may be included. The **literature review** allows us to explore what secondary source information is offered to the analysis of the topic and the questions constructed, and what are the gaps and uncertainties and that therefore constitute aspects to investigate. Some of the required previous steps include a clear statement of the search topic and dimensions, and the definition of criteria for inclusion and exclusion of documents to be reviewed (level of affinity with the objectives, year of publication and their degree of indexing in specialized journals, etc.). The **online expert survey** is proposed as a complement to the literature and data review, to answer some of the level 1 research questions (associated with *who, where*, or *what)*. It is implemented before the expert meeting as a detailed questionnaire that is sent to relevant actors and invited experts. The questionnaire should be short, with a maximum of 15, preferably closed and multiple-answer, questions. We recommend using programs such as *SurveyMonkey* or *LimeSurvey.*

The **second phase of data collection and analysis** is intended to answer level 2 questions (factors, causes, implications and/or challenges of the new emerging trend or phenomenon). The strategy of this phase is mainly aimed at expert meetings and *facilitated* groups. The aim of the **expert meeting** is to get a picture from multiple perspectives and fields, and provides an opportunity to validate and adjust the findings of the first stage, as well as bring them together in a coherent overview. It is recommended that the duration of the meeting does not exceed a day and a half. It is divided into four main parts: expert presentations, discussion groups, presentation of the data collected in phase 1, and a presentation of conclusions.

Limits and feasibility

There are many research questions for which this strategy is not appropriate. For example, if numerical data is needed it is preferable to opt for strictly quantitative methods, or if the goal focuses on identifying which mechanism or device is most effective, it is recommended to implement studies with evaluative designs. On the other hand, by focusing on new trends or emerging phenomena, Trendspotter studies produce necessarily biased information, for which interpretation of their results should be done with caution and knowing their exploratory nature. The information collected through expert opinions presents the limitations of the survey of information from key actors or informants, so it is suggested to strive for a continuous triangulation with periodic statistics, administrative surveys, and published literature, to improve validity (Mounteney, Fry, McKeganey, and Haugland, 2010).

IV. Diagnostic methodological devices

These methods are based on the premise that an effective drug policy response is constituted by the systemic interaction of multiple actors, interests and rationalities, and as the result of a process involving a network of social actors, institutional and context-specific elements. Broad community support from the earliest stages is likely to have an impact on an effective intervention plan being implemented that can deal with basic complexity.

RAP (Rapid Assessment Procedure)

Relevance and objective

The methods for rapid assessment, disseminated through the acronym RAR (Rapid Assessment & Response) or RAP (Rapid Assessment Procedure) have been applied in areas such as socio-environmental disasters, health crises and the field of drugs and HIV/AIDS. This approach is characterized by the speed, cost-benefit, strategic use of different techniques and sources of information and the involvement of local actors. In this sense, rapid assessment methods recover aspects of participatory action research (PAR), as local actors provide information relevant to the design and implementation of the study and discuss and validate the proposals for action that are derived. In particular, the RAR method investigates the perception and knowledge that the community or institutional actors, and the recipients of programmed responses themselves, have about their living conditions, problems and risks and harms in their life contexts, as well as their assessment of current and desirable responses to address these issues (Grup Igia, 2002).

Additionally, rapid evaluations identify interventions that are necessary, appropriate, feasible and cost-effective, as well as point out obstacles and determine their feasibility (WHO, 1998). Therefore, its methodological development implies, from social participation, the assessment of the problem and the resources available or necessary to address it, as a strategic axis for the sustainability and relevance of its implementation.

Practical aspects of the method

Since there is abundant literature on the method, we will present it in a summarised form and organized in three levels of generality: minimalist, intermediate and maximalist.

The **minimalist level** is a macro level in which the RAP or RAR method is understood as a technical-methodological instrument integrated into the diagnostic phase in the context of the Life Cycle of a given Project, placed as a response to an initial query and as a prelude to the development, implementation and evaluation of interventions.

Considering an **intermediate level,** the structure, organization and implementation sequence of the RAR or RAP can be described. The first action is the **familiarization with the host community**. At this time, the driving team knows the history and shape of the community and the groups that make it up through a mapping of the territory with respect to its main characteristics, the relevant social agents, the conflict zones, etc. It is important to distinguish active minorities, leaders, potential beneficiaries, organized groups, etc. Once the familiarization process has been

carried out, work is done towards the creation of a **Community Action Committee** (hereinafter CAC), whose characteristics, composition and duration will depend on each situation and context. In any case, the CAC will be critical to support and implement the subsequent steps. In some territories, there may be groups which are already constituted (civil associations, community groups, networks of organizations) that may become CAC, or have the capacity to incorporate those roles. It should be carefully considered whether to create a new group, whether to work with an existing group, or a combination of both.

In the RAR or RAP we do not work with the traditional conception of diagnosis but with **"situational analysis**": a dynamic method of analysis of the problem according to the assessments, weights and interests of each actor involved; considering that this situation varies according to the actions of agents themselves. The **needs assessment** is relative to the type, magnitude and scope in which a problem arises. The **assessment of resources** shall correspond to the characterization and sizing of the responses that are available or required. To do this, it is necessary to know the weight and capabilities that the actors involved have in front of each possible solution, to know what are the collaboration or acquisition strategies that need to be designed. After the situational diagnosis, an **action map** should be developed**,** considering the relevance, feasibility, resources that are needed and any obstacles that could impede the realization of the project. It is essential to agree with local experts and community members to ensure support for responses and interventions. In this sense, it is nodal to **build favourable alliances** from a set of activities aimed at promoting community adherence and the generation of a positive atmosphere, promoting ideas on public health, human rights and the social management of the problem.

At the **maximalist** level, it is finally possible to identify and describe, though simplified, some areas related to the issue of drugs in a local context (structural, social and cultural, consumption, and adverse consequences) around which information is required (Sepulveda, et. al, 2008). The **structural context** is made up of those factors that influence the basic structure of a given locality or community: population demographics, migration, mobility, social and geographical distribution of health and disease, socio-sanitary network, political, legal and economic situation, public media and local communications. It is about assessing how each of these factors influences the current situation of the problem, and how they might influence the implementation of the responses. In the assessment of the social and cultural **context,** on the other hand, the images, representations and meanings that individuals and groups elaborate on drug uses, users and social and/or institutional responses that have developed or could be developed are considered. It should also identify the representations that the users themselves have of the community and how they are seen by the community, as well as the services that serve them. That is why the presence in the CAC of legitimate representatives of users will be very relevant.

On the other hand, under health and rights approaches, drug services seek to reduce the harm that drug use causes to users and their environment. For this, it is essential to have a positioned and relational knowledge about **the subjects, drugs and contexts of use,** as well as, with regard to the scope of **adverse consequences (risks and harms),** we must be able to assess the types of harms associated with the use and lifestyles, the factors that influence them, their magnitude

and evolution, and aspects that reduce them. Relevant aspects are: diseases and associated problems, risks, adverse events related to conditions and lifestyle, etc.

Social mapping

Relevance and objective

Social or participatory mapping is a tool to obtain territorial information and is useful in the construction of comprehensive community diagnostics, since it allows to interrelate different actors in the territory. This procedure entails directly involving the inhabitants of a locality in the process of representing the territory, providing the possibility of developing their own maps: it is a conceptual and methodological proposal for the elaboration of thematic maps through communication processes between participants and combining different types of knowledge in order to arrive at a joint image of the territory. It is a process of horizontal and democratic construction of knowledge (SEDRONAR, 2018).

During the elaboration of the maps, the participation and involvement of the community is highlighted. This mapping is not built by external experts as in the case of traditional maps, but articulates the language of the community that lives and experiences a certain space and the language of the social scientist who perceives it in another way (Diez Tetamanti et al., 2012). It enables the interactive analysis of a given geographical area, in which strengths, opportunities, weaknesses and threats of the community are determined through technical and experiential instruments (through community dialogue); trying to find, create and/or recreate possible solutions. In this way, the knowledge of the community is valued and legitimized (Habegger, Mancila, 2006). Being a participatory process, it enables citizens to discuss the territory and its reality at the local level.

Practical aspects of the method

The mapping is guided by technical professionals with the aim of relaying information in an orderly manner, for which they establish a series of specific slogans. The information collected will then be validated with other key players and by the technicians who analyse the territory. In turn, during this process of information-building, the "historical and social documentation that allows to reconstruct local spatial processes and refer to them as support to understand the current situation of a community and apply the operationally knowledge in planning" are revealed (López Gómez, 2012: 9). The map serves as a focus of motivation and orientation, inviting to reflect and rediscover the space in a process of relational consciousness, calling the inhabitants of a certain territory to talk about what they know about the space and to express their perception about it. (Herrera, 2016).

This method involves different qualitative and quantitative techniques. In relation to qualitative-interpretative techniques we can find: open and closed interviews, discussion groups, workshops, as well as tours of the territory and narration of experiences by the participants (Habegger, Mancila, 2006). Quantitative ones concern the measurement of what exists and what is lacking in the territory, for example in relation to accessibility to services, their operation and distances, among other aspects.

In the process of building the mapping three phases can be identified: participatory diagnosis of the territory (collection of information and representation and dumping on conflict maps,

networks, etc.); collective construction for community intervention (guidance maps for decision-making, such as resource network maps); and other phases that manifest changes and continuities leading to new analyses, and that lead to cyclical processes where we can observe the changes of the territory in different cartographic versions. In this way, the techniques implemented contribute to the construction of a collective diagnosis that can include problems of the community in the territory, possible solutions, strengths and resources. The thoughtful and communication procedure involved in building the map allows an approach to the community.

Limits and feasibility

With regard to feasibility, we find opportunity as a main advantage since from the visualization of the map of the territory we can understand in a comprehensive way the problems in a given space, thus facilitating access to the information that has already been validated by the community. Counting with this validation when formulating possible solutions to the problems identified in conjunction with the community is vital to generate better public policy responses. It also allows the community itself to be strengthened as these participatory procedures make members feel as part of the solution to their own problems.

In the study on drug problems the implementation of a collective mapping is essential as it generates a bond with the community, its practices and concerns, reading the territory in which they live. Participatory mapping facilitates a means of communication with the community, to understand their problems today. It is a means that allows, by bringing back the community´s voice, to know its problems and introduce improvements in a participatory manner. In this way it allows to discover phenomena that are hidden, for example, from national surveys. Practices and habits can be better understood when they are placed in the everyday life of a community and jointly validated with it.

Final comments

The work of this document carried out in Activity 1.6 of the Strengthening of National Drug Observatories Component of the Cooperation Programme between Latin America, the Caribbean and the European Union on Drugs Policies (COPOLAD II) was set out in three key axes: the concept and mapping of new emerging threats and problems in the CELAC countries, and the dissemination of novel or low-utilization methods.

On the one hand, the conceptualisation of *the new threats* involved the theoretical shaping of phenomena that are presented only from signals or signs - albeit with some coherence - and radical novelty, emerging as objects that have escaped the sensitivity of traditional NDO methods, along with *emerging problems,* which, while not novel, manifest unprecedented forms, changes, and dynamisms. Both the *novel* and the *emerging* are in fact the object of work of the NDOs and EWSs of the CELAC countries, this exercise therefore seeks to be meaningful to them and to outline a possible common language for the regional understanding of the study in the field of drugs. In this process, an unanticipated aspect emerged in the initial configuration: the notion and relevance of *internal threats.* The process of identifying *threats* by NDOs and EWSs puts these information systems and their data collection capacity at the forefront of reflection. Thus emerged the notion of *internal threats:* aspects of information systems that hinder, bias or remove sensitivity to the ability to produce knowledge about the *threats* traditionally found 'outside'.

Consequently, regional mapping involved the incorporation of both dimensions. Thus, with regard to the *external,* the region is shaping up as a scenario of processes characterized by growth in magnitude (e.g. the increase in the amount of NPS identified), heterogeneity and dynamism (e.g. *virtualization* of drug marketing processes), as well as the emergence of new population patterns of use (e.g. changing gender gap and emerging opioid use), and evidence of ignorance and uncertainty about the drug or dose used, in relation to adulterants that further modify its potential. On the other hand, with regard to the *internal,* the current scenario presents at least two levels of analysis: a structural or institutional level, and another of a technical or operational type. While, as far as the former is concerned, different strengths or weaknesses are observed within the CELAC countries, relating to budgetary and operational issues and the availability of human resources, there are weaknesses in relation to the limits of traditional methodological strategies, which undoubtedly call for a methodological review.

This review aimed both at the improvement of traditional methodological strategies and their possible complementation with other methods that allow timely information to be produced in a sensitive manner with the new and the emerging, both in extension, depth or diagnostic ability. The dissemination of novel or rarely used methods seeks to make available to the NDOs of the CELAC countries methodological possibilities for the understanding of external threats, and for the strengthening of certain internal threats, especially operational ones.

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Clauses *ad cautelam,* clarifications and exemptions

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