**PUBLIC EXPENDITURE ON SUPPLY REDUCTION POLICIES**

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The aim of this publication is threefold. First, increase international awareness about the importance of estimating public expenditure on supply reduction initiatives. Second, raise public awareness of the need to agree upon harmonizing definitions and increasing the availability, comparability and reliability of data as well as methods for sound estimates. Third, contribute to developing national and international estimation practices to obtain accurate, complete, reliable and comparable drug policy evaluations.

The target audience include officials involved in the evaluation of drug policy; those wanting to evaluate drug policy priorities, develop drug policy strategies and action plans and analyse their economic, social and political consequences; accounting authorities; entities seeking funds to finance their service provision; and researchers.

# Introduction

Most European countries have a national drug policy presented in a drug strategy document (EMCDDA, 2015). National drug strategies tend to reflect a balanced approach between drug demand and drug supply reduction (EMCDDA, 2016). An optimal balance, however, may not imply that the two approaches receive an equal share of resources and attention but will depend on country specific priorities and aims for the different sectors of drug policy, as well as on the relative price of implementing each activity in a cost-effectively manner.

Supply reduction is often the main approach used for addressing the drug problem. Still, efforts aiming at reducing the demand (mainly prevention and treatment measures) are also important elements, and harm reduction initiatives have gained importance over the years. Furthermore, the effects of supply and demand reduction efforts are often interrelated. For instance, successful reduction in drug availability may influence the consumption of drugs and by that affect also problem drug use and adverse drug use consequences.

The overarching objective of supply reduction is a measurable reduction of the availability of illicit drugs. Supply reduction initiatives comprise the whole system of laws, regulatory measures, courses of action and funding priorities concerning illicit drugs put into effect by a government or its representatives (law enforcement officers such as police and customs officers, judges, prison guards etc.). A reduction in drug availability is aimed for through disruption of illicit drug trafficking; dismantling of the organized crime organizations that are involved in drug production and trafficking; efficient use of the criminal justice system; effective intelligence-led law enforcement and increased intelligence sharing and; an emphasis on large-scale, cross-border and organized drug-related crime (EMCDDA, 2016)*.*

As stated in documents like the 2013-2020 European Union Drug Strategy (Council of the European Union, 2013) and the EU Action Plan to Combat Drugs 2013-2016 (Official Journal of the European Union, 2013), an evaluation of the drug policy is an integral part of the approach to fight illicit drugs. The estimation of drug-related public expenditure can be seen as a first step in this direction. Public expenditure estimates aim to calculate the amount of resources spent, or needed, to implement targeted interventions in a particular policy field, and may reveal to what extent the policy intentions are reflected in relevant budgets and are conditioned by size of the drug phenomena.

Comparing public expenditure on demand and supply reduction efforts is one way of examining the authorities’ response to the drug problem. Further, accurate estimates of public expenditure necessary for implementing drug policy initiatives will help policy makers to plan relevant interventions and make the required funds available for the authorities in charge of implementing them. Moreover, also cross-country comparisons of the level and composition of drug expenditures may be useful for decision makers evaluating national drug policies (EMCDDA 2008). In addition, a thorough assessment of drug policy expenditures will contribute to improved transparency and accountability of public institutions. Sound planning, improved knowledge with regard to the recourses allocated to this policy field and cost-effective resource allocation are particularly required in times of economic downturns and reduced available resources.

A subsequent step to policy evaluation would be to systematically compare the public expenditures and other possible costs to measures of output or results of the policy. Depending on how the results are defined and measured, analysis such as the cost-benefit or the cost-effectiveness analysis can be conducted (see glossary). In this case, resource inputs (the costs of labour, capital and/or equipment) are linked to intermediate (e.g. number of drug dealers arrested); final outputs (e.g. lives saved, life years gained, number of drug users, reduction in drug-related harms, percentage reduction in crimes committed) or; policy goals. Irrespective of the chosen output measures, however, public expenditure will be a central cost factor, since governments constitute the main provider of drug supply reduction services in Europe.

A thorough economic evaluation can provide policy makers with information required for taking well-informed decisions. Although the data and quantification of *all* outcomes and cost elements required for conducting the most comprehensive analyses are currently not available, a somewhat less extensive analysis and improved understanding of the individual elements involved is still possible, useful and desirable. This report will take the first step towards a systematic analysis by examining a set of representative attempts to estimate public expenditure on supply reduction policies. It proposes a common set of definitions to be used for public expenditure assessment and evaluation, and it aims to establish a common basis for understanding such complex subject matter and facilitate comparability in three main dimensions: time, policy and countries. Although it is mainly confined to supply reduction expenditures, in order to contextualize them, it describes the proportion that total drug-related expenditure represents of national public spending and presents the balance of expenditures between demand and supply reduction initiatives for a number of European countries. To facilitate and promote future empirical expenditure studies, relevant data sources and methodologies applied in empirical estimations are listed and discussed. Examples of sectorial models of public spending and examples of national supply reduction expenditure studies are provided. Finally, some conclusions and recommendations are offered.

# Defining concepts

***Public expenditures***

The term ‘public expenditure’ refers to the value of goods and services purchased by a general government (at central, regional and local level) in order to perform its functions. For instance, it refers to resources spent on healthcare, justice, public order and safety, education, social protection, etc. (Eurostat, 2011), and its quantification is a costing exercise undertaken from the government’s perspective (EMCDDA 2008). The role of private expenditures in drug policy varies across nations, time and policy areas. In many countries, drug treatment is partly financed by the private sector (insurance companies, the drug users or their employers, relatives etc.). In other drug policy areas, such as supply reduction, private funding usually constitutes a negligible share of total spending (European Commission, 2012).

***Drug-related public expenditure***

Drug-related public expenditure is the value spent by governments in goods and services with the aim of tackling the illegal drug phenomena. Although drug policy expenditure estimates are deemed useful, most countries do not produce separate drug-related budgets as part of their ordinary budget routines. Relevant analyses and estimations can be complicated since several inter-ministerial and cross-governmental sectors are involved in the drug control programs including justice, policing and border control, prisons, social protection, education and health among others. Disentangling drug policy expenditures across governmental departments and inter-sectorial policies remain a scientific challenge. Changes in legislation and the structure of public administration can further hamper the comparability across time.

An additional challenge concerns that drug-related programmes and activities can be found at many different levels of the public administration. For instance, the funding of imprisoning drug law offenders is usually provided by the central government, while the prevention of street dealing or social reintegration programmes for former drug dealers are frequently financed by local authorities. This makes it necessary to compile data at different administrative levels, which can be demanding.

Further, frequently only a small fraction of drug-related public expenditure can be traced back directly to governments’ documents or single budget lines, i.e., are “labelled expenditure”. The required data are instead embedded in budgets for larger sectors or programmes (“unlabelled expenditure”), which implies that modelling and calculations are needed. For instance, it is common that prisons do not have a separate budget for drug-law offenders, because they have usually one unique budget for their entire activity. Therefore, the values of this embedded expenditure can only be estimated through modelling approaches (EMCDDA, 2014). This requires skills, modelling tools and techniques.

Irrespective of the factors which may challenge the robustness of estimation results (limited data availability, layering of assumptions, changes in definitions, regulations over time etc.), the application of existing models can provide useful insights, as the experiences from various countries show (see examples below).

***Drug-related expenditure on supply reduction initiatives***

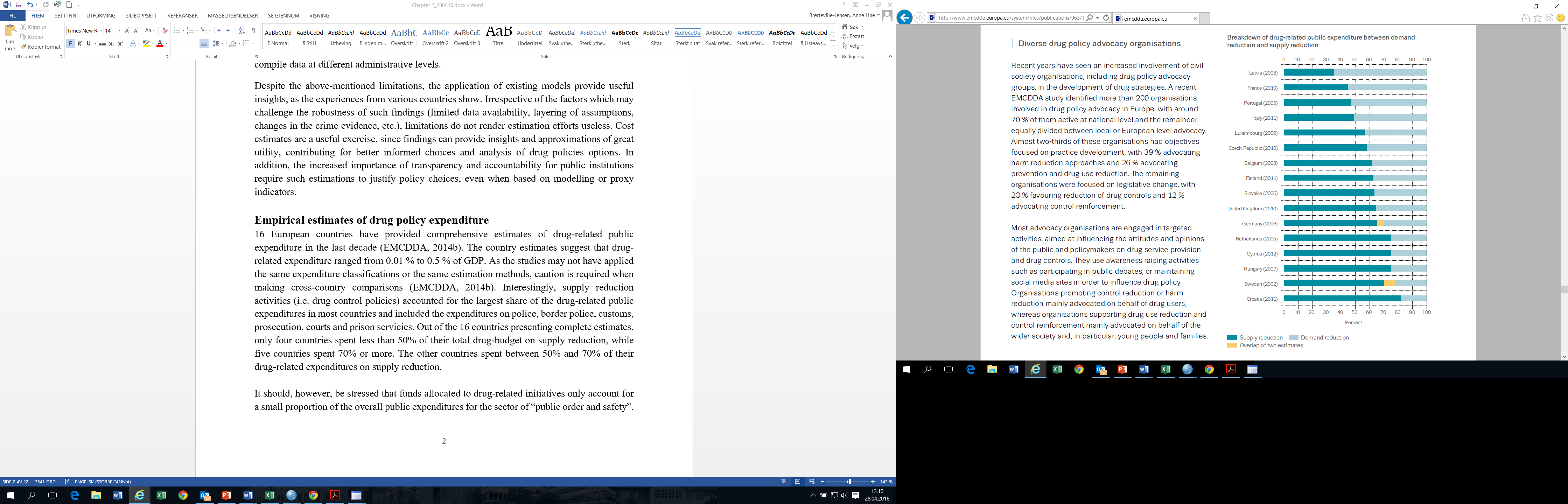
In this report public expenditure on drug supply reduction comprises the funds spend by the general government with the broad purpose of providing ‘public order and safety’ and with the support of police, law courts and prisons services geared towards the combat of the illegal drug phenomena, as defined by Eurostat (Eurostat, 2011). In general, police services comprise, among other, the operation of regular and auxiliary police forces of ports and borders, coast guards and customs, as well as road traffic regulations and supervision. The services provided by law courts are the operation or support of civil and criminal law courts and judicial systems, the service of prosecution and the enforcement of fines and probation systems. Prison services comprise the activities of administer prisons and the operation or support of prisons and other places for the detention or rehabilitation of criminals, such as prisons farms, workhouses, reformatories, borstals, asylums for the criminal insane, etc. (Eurostat, 2011).

In the public expenditure on drug supply reduction initiatives, the vast majority of resources will be spent on enforcement towards producers and dealers, but may also include legal actions toward users for drug possession, when required by national judicial systems.

# Empirical estimates of demand and supply policy expenditure

Over the last decade, at least 16 European countries have provided comprehensive estimates of drug-related public expenditure (EMCDDA, 2014b). Country estimates suggest that drug-related expenditure ranged from 0.01 % to 0.5 % of the gross domestic product (GDP). As the studies may not have applied the same expenditure classifications or the same estimation methods, caution is required when making cross-country comparisons (EMCDDA, 2014b).

Interestingly, however, the information available suggests that supply reduction activities accounted for the largest share of the drug-related public expenditures in most countries. Out of the 16 countries presenting complete estimates in the last decade, only four countries spent less than 50% of their total drug-budget on supply reduction, while five countries spent 70% or more. The other countries spent between 50% and 70% of their drug-related expenditures on supply reduction.



**Figure 1 Breakdown of drug-related expenditure between demand and supply reduction.**

Source: EMCDDA, 2014b

Analysis has further shown that funds allocated to drug-related initiatives only account for a small proportion of the overall public expenditure for the sector of “public order and safety”. For instance, in 2008 (the only year this exercise was systematically conducted in European Union countries), supply reduction expenditure represented between 2 % and 12 % of the total public expenditures in this sector. This proportion compares to the proportion of drug-related spending on “health” and “social protection” sectors. The proportion of drug-related expenditure on these items, accounted for less than 1 % of the total public spending on ‘health’ and on ‘social protection’, in that period. Since most public spending on demand reduction initiatives is classified under ‘health’ and ‘social protection’, this may further suggest that European countries give higher political priority to supply reduction initiatives, in the framework of public order and safety, than to demand reduction initiatives in the framework of overall public health (EMCDDA, 2008).

# Steps in cost estimation and analyses

Clarifying definitions, improving estimation methods, agreeing on best practices and finding reliable, standardized data will increase and expand the utility of public expenditure estimates, as analysis over time and across policy areas and countries could be improved. Improved data quality and further methodological developments are needed. To this end, we list below some recommended, general methodological steps in cost estimation and analyses (Single, 2003).

***Defining the scope and objects***

Globally speaking, a first step for a viable estimate is defining the scope and type of the public expenditure considered. Further, a clear specification of the geographical area and which function of public provision the estimates cover are needed.

***Inventorying service providers***

Second, it is necessary to identify the public entity or institutions responsible for the provision of the drug-related services – in the scope of this report; supply reduction measures and interventions. The government authorities and public institutions and services responsible for the implementation of the drug policy initiatives on the different competency levels have to be inventoried.

***Mapping financing entities***

Then, the third step is to identify who finances these service providers. This implies that a public expenditure analysis proceeds from the perspective of the different public authorities which fund the respective aspects of the drug policy. Irrespective of the governmental structure, expenditure from all relevant national, regional or local government institutions directly or indirectly associated with drug policy should always be included.

Matching stakeholders responsible for providing drug policy services with their financing entities might be challenging, as the entities in charge of providing public services are not always obvious and easy to identify. For instance, when there are drug treatment services provided within prisons, the entity in charge has “public order and safety” as its first function but “health” as its ‘real’ goal. Therefore, analysts must consider whether to include the costs of these activities as supply reduction or demand reduction initiatives. Eurostat, and most international organizations concerned with policy evaluation, includes the provision of services in the main function which the funds are used for, even if provided by less obvious entities. In this case, public expenditure on drug treatment provided in prisons should be excluded from expenditure estimates of supply reduction services and accounted as drug-related health expenditure. Sometimes, provision will be under the responsibility of private agents while the financing is under the responsibility of the government.

It should be noted, however, that the same service may serve multiple policy purposes and double counting should be avoided. For instance, in the case of social reintegration programmes in deprived neighbourhoods, their financing may serve both the purpose of preventing drug crime (and should be added to supply reduction expenditure) and; the purpose of preventing drug use (and be also accounted as health spending, in demand reduction spending). In public accountancy, the same funds should not be accounted twice. Therefore, researchers will have to opt for accounting this spending only once, either in health prevention or crime prevention. Sometimes, options are difficult and the best way to deal with situations is to guarantee that researchers leave track of different options adopted and assumptions made during exercises.

***Data collection***

The fourth step is to define a strategy to collect the required data on public expenditure. In order to obtain relevant information, analysts will have to examine policy documents and accountancy data. It is also recommended to interview the major stakeholders in the field as a way to have better information about where financial data might be available, as is a search for international datasets.

***Classifying and identifying data on drug-related spending***

It is essential to classify public expenditure according to the purpose which the expenditure is intended for (Reuter et al., 2004 and Eurostat, 2011), so the next step to consider is how to group drug-related spending according to these sub-purposes. Taking into account that drug-related expenditure on supply reduction initiatives comprises funds spent with the aim of combating the illegal drug phenomena with the use of police, law courts and prisons services, the classification commonly used in international comparisons is[[1]](#footnote-1):

* The classification of public functions (COFOG) provides a useful framework to classify public spending according to its purpose. Under COFOG, most drug control policy expenditure is accounted under the “public order and safety” class of expenditure. The most directly relevant subclasses are ‘police services’, ‘law courts’, ‘prisons’ and ‘R&D public order and safety’ (EUROSTA, 2011).
* Reuter (2006) relates public expenditure to the supply and demand side of the market. He defines public spending on supply reduction under the definition of ‘enforcement programmes’ and considers that these are *‘programmes aimed at traffickers and producers to shift up the supply curve for drugs; other things being equal, they should raise the price of drugs and lower quantity. Programmes aimed at users and retailers raise the transaction costs of buying drugs’*. In another words, enforcement programme will make drug producing, trafficking or dealing more expensive - because either provokes an increase in unitary costs of production or introduces more risk in the business (Costa Storti and De Grauwe, 2009).

The research community has formally adopted neither of these classification systems. As Eurostat publishes data annually in accordance to the COFOC classification, however, their system is frequently used. Eurostat publishes data on public spending with the purpose of guaranteeing public order and safety, split into the above-mentioned classes. Researchers still have to opt for criteria and models to disentangling drug-related spending from these overall classes of expenditure.

In fact, supply reduction initiatives are often embedded in policy projects with broader objectives and budgets. Therefore, first, it is important to look beyond expenditure exclusively used for drug policy and also include spending intended on broader policy domains that are indirectly, but significantly, contributing to drug policy or impacting on it. For instance, investing in an effective policing of certain problematic neighbourhoods, in order to prevent all types of crime, may contribute to avoiding that also drug dealing takes place. Consequently, it is relevant to take into account overall budgets for initiatives which may have direct synergies for drug policy objectives. Second, in order to disentangle drug-related expenditures from overall expenditures, modelling techniques are required. For instance, special estimates and well defined methodologies are needed to disentangle expenditures on drug-related crimes from overall public spending on law courts (more details on methodologies are given below).

In the case that not all required data are available in international datasets, national databases should be mapped. Every country has different structures of drug control services provision and financing. National data mapping can be determined in different ways: on the basis of information from registration systems, annual reports, interviews with key experts and/or contacts with the work field (De Ruyver et al., 2007). A detailed mapping of available data can be demanding and requires an intensive use of resources. However, it is a fundamental milestone for any drug control estimate of public spending.

***Extracting expenditure data from sources: labelled and unlabelled expenditure***

Some of the funds allocated by governments for drug-related expenditure are identified as such in the budget (i.e., they are ‘labelled expenditure’). Often, however, the bulk of drug-related expenditure is not identified (‘unlabelled expenditure’) and must be estimated by modelling approaches. The total drug-related expenditure is the sum of labelled and unlabelled drug-related expenditures (EMCDDA, 2016).

Since *labelled expenditures* are clearly identified in budgets, calculation methods are not required. Time series data for labelled expenditures are often available. The biggest challenge faced when data on labelled expenditure are compiled, is the complete mapping of all entities in charge of providing these services as they can be spread across different levels of the government. Depending on the national structures, expenditure from all relevant national, regional or local government institutions that are directly or indirectly associated with drug policy should always be included.

For *unlabelled expenditure*, a modelling procedure is required to estimate these expenditures and the modelling is either based on a *top down* or *bottom up* approach. Frequently, these estimates require the use of activity data to elaborate estimates (ex: number of crime offenses, offenders, criminal cases, prisoners, etc.).

*Modelling unlabelled expenditure*

The *top-down modelling approach* is mainly used when the data available on drug-related expenditure are embedded in programmes with broader goals and the fraction attributable to drugs is possible to disentangle as the proportion of the overall budget spent on tackling the illicit drug phenomena. In order to identify this proportion, models define objective criteria and calculate attributable fractions. These models estimate the fraction of drug-related spending from the broader budget.

*Unlabelled drug-related expenditure = Overall expenditure × Attributable fraction*

There is no general methodology to determine attributable fractions or “repartitions keys”. In practice, the appropriaterepartition key is determined by the object of estimate, data availability and modelling approaches available. Repartition keys are normally determined in different ways: on the basis of information from activity data, extracted from registration systems, annual reports and/or contacts with the work field (De Ruyver et al., 2007). When defining attributable fractions, the data used should preferably be publicly available and, even better, within international databases. This would guarantee possible replications of similar estimates in the years that follow and in other countries. Appendix 1 briefly present some relevant international databases. When international sources are not available, publicly available national statistics and data from competent public bodies should be used.

*Advantages of the top-down approach:*

* *Availability of data*: the availability of aggregated budgetary data means that top-down approaches can be applied easily;
* *Low cost*: the availability of aggregate cost data means that the time and costs required to estimate a top-down unit cost can be reduced;
* *Versatility:* the methodology enables an analyst to forecast how costs may change as a result of a reduction/increase in service usage (for instance, as in the case that there are less/more than expected drug-related crimes committed in a certain year) and how these costs change over time.

There are, however, some limitations associated with a top-down approach. First, it does not clearly identify different factors which may drive the costs and therefore often masks the underlying factors that determine why unit costs vary within a single, yet heterogeneous, group of service. The criteria defined for estimating attributable fractions do not always take into account all characteristics that may impact on total costs, i.e. simplifying costs functions are often employed. Therefore, these estimates are often not very precise. Nevertheless, they are frequently used and provide valuable proxy indicators for average costs.

An alternative method to estimate drug-related expenditures is to base estimates on the costs of providing one unit of public service, i.e, the *bottom-up modelling method*. This modelling approach starts by detailing how much it costs to provide one unit of service or intervention. For instance, how much does it cost to keep one drug-law offender in prison? Taking into account the different costs borne by the government for running a prison, such as the real costs of state property, prison staff, electricity, water and gas, machinery, etc, it is possible to estimate how much each detainee costs, per day. This sum can then be multiplied by the number of drug-related detainees, considering the different costs that each type of detainees may encompass, as the different lengths in prison, different security levels, etc. To get the total expenditure of drug control policy, all cost elements should be identified and summed.

The bottom-up method is particularly appealing when relevant unit costs are readily available. If, on the other hand, every type and element of the drug policy has to be separately estimated, the approach can be demanding and challenging.

*Advantages of using a bottom-up approach:*

* *Transparency*: detailed cost data allows potential errors to be investigated and their impact tested – this facilitates a possible quality assurance process;
* *Simplicity*: the calculation required to estimate unit costs is easy to understand and direct, providing a simple way to quantify the administrative and overhead costs associated with a range of public services;
* *Detail*: detailed cost data can highlight variations, and enable analysts to explore the drivers of variation and determine whether, for example, some service users account for a disproportionate share of costs;
* *Versatility*: the methodology enables an analyst to forecast how costs may change as a result of a reduction in service usage or demand.

However, the main disadvantage associated with the bottom-up approach is that it requires detailed information, both concerning the type of costs associated with the provision of each service (full knowledge of the production function of each public service), and about the unit cost of each of the production factors.

A combination of the two approaches may be preferred. The advantage of this double method is that it makes verification possible; the data gathered on the basis of the top-down approach can be double-checked and completed with the data retrieved from the project actors in the field.

***Reporting values of estimates***

The basic format used to report the value of estimates is using monetary value in nominal terms. However, for the sake of time comparability, if reported in monetary units, estimates should be deflated by inflation.

Further, some authors report in percentage of the GDP (gross domestic product). This way of presenting results considers the economic dimension of a country. It is likely that drug-related spending is higher in a country with 85 million inhabitants compared to a country with 10 million inhabitants. The same holds for a higher income country (EMCDDA, 2008). For these reasons, reporting the value of estimates in percentage of the GDP is a valid choice since it accounts both for the inflation problem and the size and level of income of a country.

Another frequently used approach is reporting the value of spending per number of problem drug users. In this case, authors take into account the dimension of the drug problem. Reporting all these complementary measures of drug-related public spending will increase economic meaning and utility of the estimates.

# Examples of sectorial models

In addition to collecting labelled public expenditure data, there are also several examples of models applied to identify unlabelled expenditure on drug control in national contexts. Different authors have applied different definitions, datasets and models to estimate items of drug related expenditure. In this section, examples of the definitions, data and models are provided. It aim is to show the models used to estimate unlabelled drug-related spending on the different types supply control initiatives.

***Police***

Public spending on drug-related police services are probably best identified with a top-down approach[[2]](#footnote-2). In order to disentangle this expenditure from the total public expenditure on ”public order and safety” published by Eurostat, attributable fractions are calculated with the help of activity data. Authors have used auxiliary data to build these fractions, for instance, data on the proportion of drug-related offenses of the total number of offenses. The following variables provide concrete examples of variables available on national and international datasets, which have all been separately used to estimate attributable fractions:

1. number of drug-related crimes per 100,000 populations;
2. number of drug-related crimes related to drugs per 100,000 populations;
3. the proportion of time the police forces spend on combating the drug phenomena of their total working time.

To estimate the share of costs designated to spending on police activity on illicit drugs, the ratio is multiplied by the total expenditures of law enforcement agencies and reduced by any data on labelled expenditure for drug control available.

A concrete example is provided by estimates for Italy. Genetti (2014) estimated drug-related public expenditure for the police forces based on the amount of time that staff spent on drug control in 2011: the possession of illicit drugs for personal use; the production, trafficking and dealing of illicit drugs and; driving under the influence of drugs and alcohol. The proportion that this time represented of the total working time for the police forces was then used as an ‘attributable-fraction’ for disentangling the amount of money which was spent on drug-related police activities, from the total spending in police activity. Within the funds allocated on supply reduction, 14% was spent on drug-police activity; while law courts and prisons absorbed the remaining 21% and 65%, respectively.

Moolenar (2009) developed a model and provided an example of how to estimate public spending on supply reduction initiatives in the Netherlands. The author applied a top-down model based on the average cost of time of police work. Moolenar weighted this average length that each type of criminal investigations took by first, type of criminal activity (assuming that different criminal activities have different investigation costs – based the assessment on the severity of the crime) and; second, by the number of cases that each criminal activity occurred[[3]](#footnote-3).

***Customs***

As for the customs services, the share of custom officers who deal with drug control activities and/or the proportion of their working time, compared to the total number of custom officers, has been used as an attributable fraction. As input data, the number of customs officers who are involved with drug control activities forms the basis for the calculation. Then, these estimates were applied to the total expenses of the customs administration (minus any labelled expenditure explicitly directed towards this activity). It should, however, be noted that most customs officers do not exclusively allocate their working time to drug control activities, so ideally, the percentage, or an average, of working time devoted to drug control should therefore be estimated.

Kopp and Fenoglio (2002) estimated the drug-related expenditure of customs based on the proportion of customs officers allocated to combat illicit drug trafficking from the total number of customs officers. This proportion constituted then the attributable fraction applied to the total budget from customs. The authors concluded that in the year of 2000, drug-related spending on customs represented close to 10% of the total drug-related spending. Note that, as these authors remarked, omitting costs such as those of detection equipment or detection dogs may constitute a relevant limitation since these costs of detecting machinery may have a strong impact on relatively small budgets like the one from customs.

Lievens et al. (2016) estimated drug-related expenditure on customs police based on the proportion that drug-law violations represented of the total number of violations registered by services, investigation services and motorized brigades. They used a top-down method based on the proportion of drug-law offences represented from the total law offences. In 2012 customs spending represented 3.6% of the total drug-related public spending on supply reduction in Belgium.

***Court systems***

Spending on drug-related court services has been extracted from the total of national expenditure on law courts based on the following activity data:

1. the proportion of drug-related offences on the total number of offences
2. the proportion of drug-related convictions on the total number of convictions
3. the share of people imprisoned for drug-related offenses on the total number of prisoners

Kopp and Fenoglio (2002) estimated the expenditures that the drug-related crime represented for the French court system. They adopted a bottom-up approach, with estimates based on the time spent by the various types of French judges and other type of administrative staff on drug-law cases, which was then multiplied by their average salaries. Based on this method, the authors concluded that law courts represented about 24.4% of the total drug-related public expenditure in France in 2000.

In Croatia, the drug-related spending on courts encompassed the drug-related cases prosecuted by the State and the courts ([Švaljek, S](http://www.eizg.hr/hr-HR/dr-sc-Sandra-Svaljek-49.aspx). and [Budak](http://www.eizg.hr/hr-HR/dr-sc-Jelena-Budak-59.aspx) J., 2014). The approach used was a top-down based on estimates for the proportion of drug-related crimes as a proportion of total crimes registered by the police. Researchers recognized that estimates were crude but they could not obtain a better proxy for this particular component of the estimates.

In Sweden, expenditures for drug-related prosecution and court cases (district, court of appeal and supreme court) were estimated based on a bottom-up approach, which combined the number of cases and the average cost by case (Ramstedt, 2006). The data were obtained from an expert official within the judiciary system. It should be noted, that the average case cost was not recorded by type of crime, i.e. the average for all types of crimes was used as an indicator for drug crimes. Moreover, for the court of appeal and supreme court, only the total number of criminal cases was available and the fraction of drug cases were estimated from the situation at the District courts (9%). Even more relevant for the range of estimates, the author included as an upper limit of estimates, a certain percentage (30%) of the costs of tackling other crimes as they may had been committed under the influence of drugs.

***Prisons***

Unlabelled costs of drug-law offenders in the prison system can be estimated using the share of convicted prisoners for drug related offenses of overall convictions. For example, to estimate the drug-law offenses related expenditures in prisons, two elements have been taken into account: the overall prison expenditures for a given fiscal year, and the attributable proportion of prisoners convicted for drug-law offenses.

EMCDDA (2014) provides an example of how public expenditure on drug-law offenders in prison can be estimated. Based on data for public expenditure on prisons provided by Eurostat and data on the number of law offenders provided by the Council of Europe, the proportion of sentenced prisoners who have a drug-law offence as their main offence was applied to total public expenditure on prisons. A range of estimates was calculated, with low estimates considering only those prisoners sentenced for a drug-law offence and high estimates also including pre-trial prisoners. Between 2000 and 2010, this expenditure was estimated to range, on average, between 0.03 % to 0.05 % of GDP in 22 European countries. By applying these percentages to the whole EU for the year 2010, the estimated expenditure varied within the range of EUR 3.7 billion to EUR 5.9 billion.

# Examples of national studies

Several models and data sources have been applied in different national contexts to identify labelled and unlabelled expenditure allocated to drug control initiatives. Due to their national specificities, neither their external validity nor the comparability of the methods used have been tested. The extent and specificity of labelled drug-related expenditure varies substantially across countries, as do the data and methods applied for estimating the unlabelled ones. The national estimates presented below are therefore not directly comparable. Still, they provide examples of useful models and estimates and illustrate some of the approaches applied.

***Croatia***

Švaljec and Budak (2013) aimed to identify the total drug-related public expenditures of the central government and develop the method of estimating and allocating unlabelled expenditures by the type of drug policy program (prevention, treatment, social reintegration, harm reduction and law enforcement). For the labelled expenditure, governmental institutions were asked to classify budget expenditures by public function and by type of programme. Unlabelled expenditures were identified indirectly with the system of repartition keys, which were applied to the total state unit budget (minus labelled costs). The repartition keys were estimated with the support of supply reduction activity data. The unlabelled public expenditures were estimated on the assumption that they make up the part of public expenditures which remains after labelled public expenditures for combating drug abuse are deducted from total public expenditures of a public body.

For the years 2009-2012, the study suggested that public expenditure on law enforcement constituted about 73% of total drug-related public expenditures by the central government, whereas prevention, treatment, social reintegration and harm reduction spent 12%, 13%, 0.3% and 2%, respectively. When comparing unlabelled expenditure for the different programs in one single year (2011), unlabelled expenditure on law enforcement represented 82% of the total unlabelled drug-related expenditure. For labelled expenditures, on the other hand, law enforcement spent 4 % of the total labelled expenditures. In sum, the estimates indicated that drug-related expenditures constituted 0.2 percent of the GDP.

***Belgium***

The study “Drugs in Figures III” measured how much the Belgian government spent on drug policy in 2008 (Vander Laenen, De Ruyver, Christiaens & Lievens, 2011). It advanced beyond two previous studies (De Ruyver et al. 2004, 2007) by carrying out a new and more refined estimation of public expenditures on illegaldrugs. The study combined a top-down and a bottom-up approach for estimating the public expenditures. The vast majority (98.45%) of the identified expenditures were derived from the top-down approach. The public expenditures based on the bottom-up approach (1.55%) came from organisations that depended on the government for most of their funding.

The total drug-related expenditures were divided by the programs law enforcement, treatment, prevention, harm reduction and “other”. For 2008, public expenditure on law enforcement constituted 45% of the total. This was little less than the resources spent on treatment (49%) and substantially more than spent on prevention (4%), harm reduction (0.8%) and “other” (1.2%). When estimated by the same procedure in 2004 and 2008, the public expenditure on law enforcement showed a substantial increase, both nominally (from 186,038,337 euros to 243,000,490 euros) and relatively to the other programs (increased by 6 percentage points).

***Italy***

In the process of estimating the Italian drug-related public expenditure (Serpelloni et al., 2013) a model was developed for analysing the flow of information sources. The model consisted of four components: private or indirect costs (individual costs and costs due to loss of productive capacity) and public expenditure or direct costs (costs of law enforcement, social and health costs). To determine the costs of law enforcement, different sources of information were used: data about traffic control and traffic accidents, police data on people who were caught with drugs for personal use; data on the number of convictions for drug trafficking and; data on crimes related to drug trafficking.

For the year 2011, they estimated that the cost of drug-related law enforcement amounted to 1,600, 435, 296.60 euros, or roughly 40 euros per inhabitant aged 15-64 years. The largest cost component was prisons and alternative measures (65%), whereas trials and legal expenses; law enforcement activities; and administration spent 21.3%, 13% and 0.7%, respectively.

***France***

In a French study the applied method relied on analysing activity records wherever available in the concerned services (Kopp, 2015). The total expenditure for drug-related activities was then aggregated. The applied top-down approach in this case provided an indication of the proportion of expenditure for drug control related activities as compared to the overall expenditures of all the institutions and services concerned. To obtain an estimate, a fraction was applied to the total cost of staff and regular functioning of the service concerned. For the year 2010, for example, 10% of police activities were attributable to drug control activities, involving 60 police units accounting for several hundreds of thousands of hours/police officers. In this example, police expenditures attributable to drug-related activities have been calculated by multiplying the total expenditure of the police services by the fraction of 10%.

The bottom up approach was also used based on the work time spent by staff in charge of supporting drug-related activities or the equipment used as recorded by the concerned services. For example, the hours of prevention interventions in schools and the time spent by the police forces on the alcohol tests were employed in calculations.

***Luxembourg***

Since 1999, the social costs of drugs has been estimated annually in Luxemburg. Estimates include the total costs for public and private agents of consequences of drug use and trafficking. Public spending has been accounted within five different sectors: prevention, treatment, harm reduction, law enforcement and research. In the law enforcement field, as in other fields, analysts faced both the challenge of accounting for drug-related spending financed by different levels of the general government and of developing models to extract unlabelled drug-related expenditure from broader budgets (Origer, 2002).

Law enforcement was estimated to account for 39% of total drug-related public expenditure; prevention, treatment and harm reduction expenditure amounted to 59%, whereas research and “other” spent 2%.

***Russia***

For Russia, public expenditures on law enforcement agencies and the judicial system, was estimated as part of a social study (Potapchik and Popovich, 2014). The comprehensive model including private and indirect costs (the cost of the individual and the costs due to loss of production capacity) and public spending, including direct spending on supply reduction services. These were disaggregated by spending on law enforcement and the criminal justice, which included factors such as law enforcement agencies and the federal drug control service.

Public expenditure on supply reduction services were estimated using a top-down approach and various sources of information were used: police data on persons who were caught with drugs for personal use; data on the number of sentences for drug trafficking and; data on crimes related to drug trafficking. As there were no published attributable fraction on drug-related crime in Russia, the fraction estimated in a study by the US Office of National Drug Control (22%) was employed in the estimation of law enforcement and judicial system expenditures. This compares to the attributable fraction

***Portugal***

There are few examples of attempts to estimate the impact of changes in the legal system on drug-related public expenditures and drug-related budgets. Gonçalves et al. (2014) represent an exception as they conducted a comprehensive social cost analysis of the situation before and after the decriminalization in Portugal. The authors found a significant reduction in non-health related costs of drug policy between 2000 and 2004, in particular in the legal system (direct) costs. Whilst these observations highlight significant changes, prudence is still to be exercised in concluding causal relationships related to the new Portuguese National Strategy for the Fight against Drugs (NSFAD).

***Other national studies***

There are additional examples of public expenditures studies than the ones mentioned above. For instance, Mostardt and colleagues (2010) estimated public expenditure in 2006 for Germany using data from EUROSTAT and the COFOG system, Rigter (2006) estimated that 76% of public expenditure were spent on law enforcement in the Netherlands, Ramstedt (2006) presented public expenditure estimates for Sweden and Livens et al (2016) published a social cost study, including estimates of public expenditures, of legal and illegal drugs in Belgium. There are also US (ONDCP, 1989-2015) and Australian (Moore, 2008) estimates. Despite substantial differences, however, the studies may all be viewed as necessary first steps in national drug policy evaluations.

# International databases used to model drug-related public expenditures

The only available international compilation of up-dated estimates for drug-related public expenditure on supply reduction is published for EU member states by the EMCDDA[[4]](#footnote-4). Here, available national estimates of total drug-related spending, and spending separated by supply and demand reduction initiatives, are reported. Still, the scope for cross-country comparisons is limited because the estimates often do not use comparable definitions, datasets or methodologies.

Another database of particular relevance is EUROSTAT. This is partly because it is based on a consistent categorisation system and on international agreed definitions, which are required features for international comparison. The Classification of the Functions of Government (COFOG) is a detailed classification system for the functions or socioeconomic objectives that general government units aim to achieve through a range of outlays. EUROSTAT has published annual data according to the COFOG classification for European countries since early 1990’s. This data source has proved to be relevant and amenable to a wide variety of analytic applications. However, the dataset does not publish data on specific spending on drug-related public initiatives. In order to disentangle drug-related expenditure from the broad classes of public spending, modelling approaches are adopted by sector of intervention.

Appendix 1 provides a list of relevant data sources. In addition to the two data sources already mentioned, there is information on the international reporting on supply reduction factors like:

* drug related crime (EMCDDA and European Institute for Crime Prevention and Control);
* prison activity and costs (the Council of Europe);
* crime and criminal justice systems (EUROSTAT and the European Institute for Crime Prevention and Control).

# Conclusions

Every European country allocates significant public resources to the drug policy field. Public expenditure studies can reveal how much public authorities are spending on drug policy and for which ends such expenditure is used. Further, public expenditure estimates can be used as a tool for assessing whether policy intentions are actually reflected in action, and they constitute a necessary tool for implementing thorough policy evaluations. Public expenditure studies should mirror all relevant activities and policy approaches and may particularly be needed in times of austerity.

Estimates from 16 EU countries (EMCDDA, 2014b) suggested that drug-related expenditure ranged from 0.01 % to 0.5 % of the gross domestic product (GDP), and revealed that the largest share of drug-related public expenditure was allocated to supply reduction activities.

* Data availability is one of the main limitations in this field. International databases are recommended because they employ broadly accepted concepts and definitions and provide better comparable data. Sometimes, however, national dataset can have more detailed or reliable information.
* The total budget for supply reduction services is the sum of labelled and unlabelled expenditures. Labelled expenditures are clearly identified in public budgets, whereas a modelling procedure is required for estimating unlabelled ones. The modelling is either based on a top-down or a bottom-up approach. A list of advantages and limitations for both alternatives is provided, in addition to empirical expenditure studies for supply reduction sectors and some European countries.
* Improving estimation methods, agreeing on best practices and finding reliable standardized data will increase and expand the utility of public expenditure estimates, as analysis over time and across policy areas and countries can be made. Improved data quality and further methodological developments are needed to achieve this.

# Recommendations

1. In order to conduct meaningful estimations of resources spent on drug control measures and to measure the impact of drug control policies, it is useful to improve relevant data sources. One option is to develop guidelines for data collection and economic modelling of evaluations.
2. It is essential to classify public expenditure based on the purpose which the expenditure is intended for. It therefore useful to use a consistent categorisation system, as the international Classification of the Functions of Government (COFOG).
3. In order to estimate unlabelled drug-related expenditures a methodology of using a set of repartition keys according to COFOG categories can be used as a starting point. A general agreement by all participating countries on definitions and methods will contribute to getting more comparable results among countries.
4. Studies of public expenditure require analytical work, which require adequate human technical capacities in place in the domains of all relevant stakeholders. This is important for obtaining the necessary data quality needed for aggregation and comparison.
5. Cross-country comparisons are important, but they are only possible with a common methodology of public expenditure estimates. Expanding and improving international datasets and modelling techniques are required in order to increase the capacity to carry evidence based drug policy evaluations in the drug field;
6. Developing methods to estimate public expenditure on supply reduction requires effective working partnerships between drug policy makers and specialists in police, law courts and prisons. Collaboration with public accountancy experts and those in charge of economic modelling is required to guarantee meaningful estimates.
7. While recognising the limitations imposed by currently available data sets, this report provides examples on current practice and, in doing so, suggests areas of focus for future desired methodological development. It is desired that the estimation of drug-related public expenditure on supply reduction initiatives and policy evaluation will move forward, in Europe. For continuous improvements to take place, however, it is essential that partnerships are extended and maintained with the goal of developing good practices, standards and guidelines in this field.

# Glossary

**Cost analysis** provide monetary estimates of the costs of a particular intervention or set of interventions, but also information on the amount of resources (e.g., labor, facility, supplies) used in their provision. The latter information is often used to identify critical cost components of the intervention and to assess whether costs are affected by changes in key assumptions (Bray & Zarkin, 2006). In addition to being the first step in a cost-effectiveness and cost-benefit analysis, cost studies can also be used to compare the relative costs of one intervention to another or to monetize savings from implementing a particular action (Chalk et al., 2013).

**Cost-effectiveness analysis**involves estimating the ratio of the difference in costs between two alternatives (net costs) divided by the difference in the outcomes (net effectiveness) (Gold et al., 1996). Traditionally, this measure has been used in health economics. However, this evaluation tool can be used in any framework of policy intervention, given that outcome measures are those relevant for each type of public policy analysed. It is essentially the incremental price of obtaining a unit outcome effect (e.g. 10% reduction in the number of drug-law offences in the past month) from a given police intervention (e.g. introducing drug squads in problem neighbourhoods) when compared to an alternative (e.g. regular policing). Costs for interventions are estimated in monetary units, such as the dollar. The effect of the intervention can be any policy-relevant outcome that is collected for all interventions under consideration.

**Cost-benefit analysis** converts all outcomes to a monetary equivalent, in contrasts to cost-effectiveness analysis (Chalk et al., 20123 and Drummond et al., 1997). As a result, the dollar value of the benefits of the intervention can be directly compared with the dollar value of the intervention’s costs. Two common methods for comparing benefits and costs include calculating net benefits (costs are subtracted from benefits) and benefit-cost ratios (benefits are expressed as a percent of program costs). A related type of analysis is the cost-offset analysis in which future costs or cost-savings are examined. Because cost-benefit analyses combine multiple outcomes into a single measure and allow direct comparison of costs to benefits, they often provide clearer guidance than cost-effectiveness analyses on which treatment programs should be adopted -namely, those programs whose benefits exceed their costs. Cost-effectiveness analyses can provide a ranking of competing alternatives but not information on the extrinsic value any single intervention independent of the alternatives (Bray & Zarkin, 2006).

**General government** comprises the central government, state government (in some countries it applies to the federal level of government), local and social security funds (Eurostat, 2011).

**Government expenditure** is defined as a particular set of transactions, comprising the expending undertaken by the units of the general government sector (Eurostat, 2011).

**Economic evaluation** is a comparative analysis of alternative actions in terms of both their costs and consequences (Drummond et al., 1997).

**Labelled drug-related expenditure** is the ex-ante planned public expenditure made by general government in the budget that reflects the public and voluntary commitment of a country in the field of drugs. Further, is any expenditure identified as drug-related in public accountancy documents (EMCDDA, 2008).

**Public expenditure** is the value of goods and services purchased by the general government of a state in order to perform each of its functions. The functions of governments are, among others, the provision of health care, justice, public order, education and social protection. Public expenditure studies are important because they provide information about the size and the composition of costs of public programmes and interventions (Eurostat, 2011).

**Social costs of illegal drugs** comprise all costs carried bythe different sectors of the society as a consequence of the illicit drug phenomena. Public expenditure is only one of the cost elements here. Social cost is the sum of public expenditure, private expenditure and the external costs. Private expenditure constitutes, for instance, the money spent by private citizens to purchase illicit drugs. External costs comprice the costs caused by the consequences of drug use, carried by any agent in society, oncluding those who do not necessarily use drugs or are involved in drug demand, supply or drug policy. For instance, external costs is the expenditure on drug-related nuisance, expenditure on tackling offences committed under the influence of drugs, losses of productivity or absenteeism associated either to drug trafficking or dealing activities, among others (Single et al., 2003).

**Total drug-related public expenditure** is the sum of the labelled and unlabelled drug-related expenditure (EMCDDA, 2008).

**Unlabelled drug-related expenditure** is the non-planned or non-publicly announced ex-post public expenditure incurred by the general government in tackling drugs that is not identified as drug-related in the budget (EMCDDA, 2008).

**APPENDIX 1**

**Available databases and potential indicators for drug related public expenditures**

*Examples of international and other types of databases, which can be used for estimation of the Public expenditures*

|  |  |  |
| --- | --- | --- |
| **Level of estimation** | **Examples of databases** | **Data’s of estimation** |
| International | **EMCDDA Statistical bulletin**  **and**  **Public expenditure database** | * The EMCDDA statistical bulletin covers a broad range of areas including the most recent estimates of drug related crime in the form of drug seizures, types of offence, price, purity and use in prison, and country responses to the drug situation in Europe. http://www.emcdda.europa.eu/data/stats2015 * The EMCDDA publishes also the most recent national data on drug-related public expenditures available in Europe. * http://www.emcdda.europa.eu/topics/drug-related-public-expenditure |
| **WHO Database** | * **Global Information System on Resources for the Prevention and Treatment of Substance Use Disorders** (include information about: [Prevalence and Burden of Disease](http://apps.who.int/gho/data/node.main-euro.A1211?lang=en&showonly=RSUD), [Monitoring and Surveillance](http://apps.who.int/gho/data/node.main-euro.A1221?lang=en&showonly=RSUD); [Policy](http://apps.who.int/gho/data/node.main-euro.A1229?lang=en&showonly=RSUD); [Treatment System And Services](http://apps.who.int/gho/data/node.main-euro.A1233?lang=en&showonly=RSUD); [Pharmacological Treatment](http://apps.who.int/gho/data/node.main-euro.A1280?lang=en&showonly=RSUD); * [Prevention Programmes For Substance Use And Related Harm](http://apps.who.int/gho/data/node.main-euro.A1319?lang=en&showonly=RSUD); [Human Resources And Civil Society Involvement](http://apps.who.int/gho/data/node.main-euro.A1333?lang=en&showonly=RSUD)) |
| **EUROSTAT** | **General government expenditure by function (COFOG)**  COFOG has two levels of classification (United Nations, 2008). The first one classifies expenditure in 10 general functions, one of which is ‘Public order and safety’. The second level classifies expenditure in 69 groups, in which can be found three indicators of interest: Police service, Law Courts and Prisons. The definitions below are provided by the UNODC.  From the general function ‘Public order and safety’:  **Police services**  - Administration of police affairs and services, including alien registration, issuing work and travel documents to immigrants, maintenance of arrest records and statistics related to police work, road traffic regulation and control, prevention of smuggling and control of offshore and ocean fishing;  - operation of regular and auxiliary police forces, of port, border and coast guards, and of other special police forces maintained by public authorities; operation of police laboratories; operation or support of police training programs.  **Law Courts**  - Administration, operation or support of civil and criminal law courts and the judicial system, including enforcement of fines and legal settlements imposed by the courts and operation of parole and probation systems;  - legal representation and advice on behalf of government or on behalf of others provided by government in cash or in services.  **Prisons**  - Administration, operation or support of prisons and other places for the detention or rehabilitation of criminals such as prison farms, workhouses, reformatories, asylums for the criminally insane, etc. |
| **UN-CTS (Crime and Criminal Justice Statistics)** | Data produced by UNODC have multiple sources. Member States regularly submit to UNODC statistics on drugs (through the Annual Report Questionnaire) and crime and criminal justice (through the annual Survey on Crime Trends and Operations of Criminal Justice Systems). Other data are collected through national surveys implemented by UNODC in cooperation with national governments or are compiled from scientific literature. UNODC attempts to maximize the comparability of the data and estimate regional and global statistics. |
| **SPACE** | SPACE unites two related projects: SPACE I provides data on penal institutions and the population held in custody, as well as on certain conditions of detention, while SPACE II collects information on persons serving non-custodial sanctions and alternative measures.  Data are collected every 2 years by means of two questionnaires sent to the equivalents of the Ministries of Justice, the Penitentiary administrations and the Probation authorities of each country in Europe. The collection and validation of these data then takes place at the University of Lausanne, where analyses and interpretations for both projects are formulated through a common methodology. This methodology aims to allow comparisons among States at the European level, by proposing SPACE categories instead of each country’s own national categories, while still including questions regarding the particularities of their specific sanctions and measures. The SPACE project produces two annual reports: SPACE I – Prison populations and SPACE II – Persons serving non-custodial Sanctions and Measures, presenting the data collected and the key points of the results. |
| **European Sourcebook on Crime and Criminal Justice Statistics** | The Sourcebook contains data from 41 European countries regarding the criminal justice systems. The book is structured by six main chapters covering different stages of the judicial system: Police statistics, Prosecution statistics, Conviction statistics, Prison statistics, Probation statistics and, for the 2014 edition, a final chapter on National Victimization Surveys. The data provided is systematically accompanied by texts and notes relative to the specificity of each country and discussing the different challenges attributed to the comparison of the data. |
| **Social Expenditure Database** | The OECD Social Expenditure Database (SOCX) provides a unique tool for monitoring trends in aggregate social expenditure and analyzing changes in its composition. The main social policy areas are as follows: old age, survivors, incapacity-related benefits, health, family, active labour market programs, unemployment, housing, and other social policy areas. |
| **ESPAD** | Drug abuse prevalence among teenagers in European countries |
| National | **Database of national statistics** | Expenditures in different groups, in which can be found some indicators of interest: Police service, Law Courts, Prisons, Medical and social services. |
|  | **Annual report fromm Social service Department** | Data on Social service Department expenditures at the regional level, Number of drug users receiving social benefits in connection with drug use |

**APPENDIX 2**

**The international Classification of the Functions of Government (COFOG)**

The COFOG classification has three structure levels at the first level; government expenditure is broken down into 10 functions. These are each divided into 69 groups (second level of COFOG), which are themselves divided into classes, the most detailed classification level. COFOG permits an examination over time of trends in government outlays on particular functions. (Eurostat, 2011)

Detailed 3-levels structure of COFOG includes financial flows of the public finance, which are going from state and local (regional and municipal) budgets to non-profit organisations (NPOs) with drug-policy programmes. COFOG is a functional classification used by SNA 1993 (System of National Accounts 1993). COFOG is useful international classification for spatial comparison (between countries) and for time comparison (over time) also. COFOG is in practice very similar. In principle, its units of classification are individual transactions. This means that each outlay (purchase or transfer) should be assigned a COFOG code according to the function that the transaction serves. This principle is valid for both transfers capital (investment) and current (non-investment) transfers. The Eurostat has published annual data according to the COFOG definitions for the European Union countries since early 2000’s.

The extensive structure of COFOG contrasts with the four-category division introduced by Reuter (2006) based on the likely effects of services provided by drug policy programmes (i.e. prevention, treatment, enforcement and harm reduction). The Reuter’s programme division is classification of the recipients (NPOs) with drug-policy programmes.

Example of an overview of public expenditure groups broken down according to the main public functions pursuant to the international classification of the functions of the government at the third level is shown in the table below

A pragmatic approach towards drug-related research and public expenditure estimates would suggest adopting a classification such as the proposed by EUROSTAT with COFOG. The COFOG classification system guarantees data annually available for most of the European countries, according to harmonized definitions and standard data collection procedures.

*Public expenditures according to the classification of public functions*

|  |  |
| --- | --- |
| **Public functions** | **Public functions at the third level of classification** |
| 01 General public services | 014 Basic research |
| 03 Public order and safety | 031 Police services |
| 033 Law courts |
| 034 Prisons |
| 07 Health | 071 Medical products, appliances and equipment |
| 072 Outpatient services |
| 073 Hospital services |
| 074 Public health services |
| 075 R&D |
| 09 Education | 091 Pre-primary and primary education |
| 092 Secondary education |
| 094 Tertiary education |
| 095 Education non-definable by level |
| 096 Subsidiary services to education |
| 10 Social protection | 105 Unemployment |
| 106 Housing |
| 107 Social exclusion |

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1. National estimates use sometimes alternative definitions. See (Lievens et al., 2016) or (Kopp, 2006) for further detail. [↑](#footnote-ref-1)
2. Despite being possible also to use a bottom-up approach, since police activity is normally financed by the budget of central government, a pragmatic approach frequently used is to start estimates from these aggregated budgets. In this case, estimates for public spending are relatively complete, considering all relevant costs. Additionally, this method facilitates the international comparability of results, since there are at least comparable data available for most European countries. [↑](#footnote-ref-2)
3. Since Moolenar 2009 did not estimate the costs of demand reduction initiatives results are not provided here. [↑](#footnote-ref-3)
4. See http://www.emcdda.europa.eu/topics/drug-related-public-expenditure. [↑](#footnote-ref-4)