

# PUBLIC EXPENDITURE ON SUPPLY REDUCTION POLICIES

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# Foreword

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**A** confirmed political will to address the drugs problem in Europe lies not only in the development of appropriate policies, but in the amount of public funds assigned to implement cost effective policies. Currently, however, analysing what these funds are is still difficult. Information and data are still sparse and national estimates tend to neither use comparable definitions nor agreed methodologies.

Supply reduction is an approach used for addressing the illicit drug phenomena. It comprises the whole system of laws, regulatory measures, courses of action and funding priorities intended to reduce the availability of illegal drugs. The EU Drugs Strategy (2013-2020) sets the dissemination of the evaluation of interventions results as a priority. Providing sound methods to estimate drug-related public expenditure is an important step in this direction. Such estimates aim to calculate the amount of resources spent on implementing targeted interventions and may reveal the extent to which policy intentions are reflected in relevant budgets.

This publication is a first step towards a systematic analysis. It examines a set of recent and representative attempts to estimate public expenditure on supply reduction policies. Consequently, it proposes a common set of definitions aiming to establish a common basis for understanding such complex subject matter and to facilitate comparability in three main dimensions: time, policy and countries. Although the study is mainly focused in supply reduction expenditures, it reports data on the balance between spending on demand and on supply reduction, when estimates

are available for European countries. To facilitate and promote future empirical expenditure studies, relevant data sources and methodologies applied in empirical estimations are listed and discussed.

This publication brings together the findings of wider study conducted by the Pompidou Group in cooperation with the EMCDDA seeking to identify the unintended effects and associated costs of drug control policies. The aim of this publication is threefold. First, increase international awareness about the importance of estimating public expenditure on supply reduction initiatives. Second, stress the importance of harmonizing definitions and increasing availability, comparability and reliability of data as well as methods for sound estimates. Third, contribute to developing sound estimation practices to obtain accurate, complete and reliable drug policy evaluations.

Promoting international cooperation and developing of effective working partnerships between drug international organizations, policy makers, specialists in accountancy, law enforcement agents and those in charge of economic modelling is the way forward. While recognising the limitations imposed by currently available data sets, this publication sheds light on current practice and, in doing so, suggests areas of focus for future desired methodological development. In this way it hopes that the estimation of drug-related public expenditure 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.

Jan Malinowski  
Executive Secretary of the Pompidou Group

Alexis Goosdeel  
Director of the EMCDDA

# Executive summary

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**S**upply reduction has been normally used for addressing the illicit drug phenomena in Europe. It uses the whole system of laws, regulatory measures, courses of action and funding priorities used by governments and their representatives.

Evaluating drug policy is an integral part of a cost-efficient approach to tackle illicit drugs. Assessing and estimating drug-related public expenditure is a first step in evaluations exercises. Estimates aim to calculate the amount of resources spent, or needed, to implement these targeted interventions. Therefore, estimates may reveal to what extent policy intentions are reflected in relevant budgets, if considered that the size of the phenomena and resources available condition choices.

Until now, estimates for the funds spent by governments in this field are sparse. They have been mostly produced at national level and applied different definitions, with no commonly agreed methodologies or comparable datasets. Uncertainty about the most appropriate economic models to use also exists. These factors have constituted effective barriers to rapid developments of policy evaluation and cost-effective analysis in the field.

This report takes a first step towards a systematic analysis, by examining a set of representative attempts to estimate public expenditure on supply reduction interventions. It proposes a common set of definitions, aiming to establish a common basis for understanding this topic and facilitating comparability in three main dimensions: time, policy and countries. Although it is mainly confined to supply reduction expenditures, in order to set the context, it describes the proportion that total drug-related expenditure represents of national public spending and; presents the balance between demand and supply reduction spending for a number of European countries. With the aim of facilitating and promoting future empirical expenditure studies and of setting the ground for the development of good practices, relevant data sources and methodologies applied are listed and discussed and examples of sectorial models of public spending are selectively provided. Finally, some conclusions and recommendations are offered.

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# Introduction

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**T**he aim of this publication is threefold. Firstly, to increase international awareness concerning the importance of estimating public expenditure on supply reduction initiatives. Secondly, to raise public awareness of the need to agree upon harmonising definitions and increasing the availability, comparability and reliability of data, as well as methods for producing sound estimates. And thirdly, to contribute to developing national and international estimation practices with a view to obtaining accurate, complete, reliable and comparable drug policy evaluations.

The target audience includes officials involved in the evaluation of drug policy; entities wishing 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.

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. Instead, it will depend on country specific priorities and aims for the different drug policy sectors, as well as on the relative price of implementing each activity in a cost-effective manner.

Supply reduction is often the main approach used for addressing the illicit drug problem. Nonetheless, efforts aimed at reducing demand (mainly prevention and treatment measures) are also important and harm reduction initiatives have gained in significance over the years. In addition, the effects of supply and demand reduction efforts are often interrelated. For instance, successfully reducing drug availability may influence the consumption of drugs and also have an impact on problem drug use and adverse drug use consequences.

The overarching objective of supply reduction is a measurable reduction in the availability and accessibility to 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.). Reduced drug availability and accessibility is achieved through a disruption of illicit drug trafficking; dismantling of the criminal organisations 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 a focus on large-scale, cross-border and organised drug-related crime (EMCDDA, 2016).

As stated in documents such as the 2013-2020 European Union Drug Strategy (Council of the European Union, 2013) and the EU Action Plan on Drugs 2013-2016 (Official Journal of the European Union, 2013), an evaluation of drug policy is an integral part of the approach to combating illicit drugs. 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 policy intentions are reflected in the relevant budgets and are conditioned by the size and characteristics of the drug phenomenon.

Accurate estimates of public spending on implementing drug policy initiatives will help policymakers to plan relevant interventions and make the required funds available to the authorities in charge of policy implementation. A thorough assessment of drug policy expenditures will also contribute to improved transparency and accountability of public institutions. Estimates may provide information on factors such as the relative importance of demand and supply expenditures and enable cross-country comparisons of the level and composition of spending on the fight against illicit drugs (EMCDDA, 2008). Sound planning, improved knowledge of the resources allocated to this policy field, and cost-effective resource allocation are particularly necessary in times of economic downturn when fewer resources are available.

A subsequent step would be to systematically compare public expenditure and other possible costs to the policy's measured outputs or results. Depending on how the results are defined and measured, a cost-benefit or 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 outcomes (e.g. number of drug dealers arrested); final outputs (e.g. lives saved, life years gained, number of drug users, reduction in drug-related harm, 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 policymakers with the information required to make well-informed decisions. Although the data and a quantification of all the outcomes and cost elements required for conducting the most comprehensive analyses are currently not available, a somewhat less extensive analysis and an improved understanding of the individual elements involved are still possible,

useful and desirable. This report takes the first step towards a systematic analysis by examining a number 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. In addition, it aims to establish a common basis for understanding this complex subject and to facilitate comparability in three main areas: time, policy and countries concerned. Although, the report mainly focuses on supply reduction expenditures, in order to contextualise them, it describes the proportion that total drug-related expenditure represents of gross domestic product. It also shows how spending is balanced between demand and supply reduction initiatives in a number of European countries. To facilitate and promote future empirical expenditure studies, the relevant data sources and methodologies applied in making empirical estimates are listed and discussed. Examples of sectorial models of public spending and examples of national supply reduction expenditure studies are also provided. Finally, some conclusions and recommendations are offered.

# Defining concepts

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## Public expenditure

The term «public expenditure» refers to the value of goods and services purchased by general governments (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 and so on (Eurostat, 2011), and its quantification is a costing exercise undertaken from the government's perspective (EMCDDA, 2008). The role of private expenditure in drug policy varies across countries, timescales and policy areas. In many countries, drug treatment is partly financed by the private sector (insurance companies, 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 sum spent by governments on goods and services with the aim of tackling the illegal drug phenomenon. Although drug policy expenditure estimates are deemed useful, most countries do not produce separate drug-related budgets as part of their ordinary budgeting exercise. Relevant analyses and estimations can be complicated since several inter-ministerial and cross-governmental sectors are involved in drug control programmes, including justice, policing and border control, prisons, social protection, education and health. Disentangling drug policy expenditure across government departments and inter-sectorial policies remains a significant challenge. Changes in legislation and the structure of public administration can further hamper comparability over time.

An additional challenge lies in the fact that drug-related programmes and activities can be found at many different levels of public administration. For instance, the funding for imprisoning drug-law offenders is usually provided by central government, while 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 a demanding task.

In addition, often only a small fraction of drug-related public expenditure can be traced back directly to

government documents or single budget lines; these are labelled expenditure. The required data are instead embedded in budgets for larger sectors or programmes (unlabelled expenditure), which means 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 usually have one single 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.

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

## Public expenditure on supply reduction initiatives

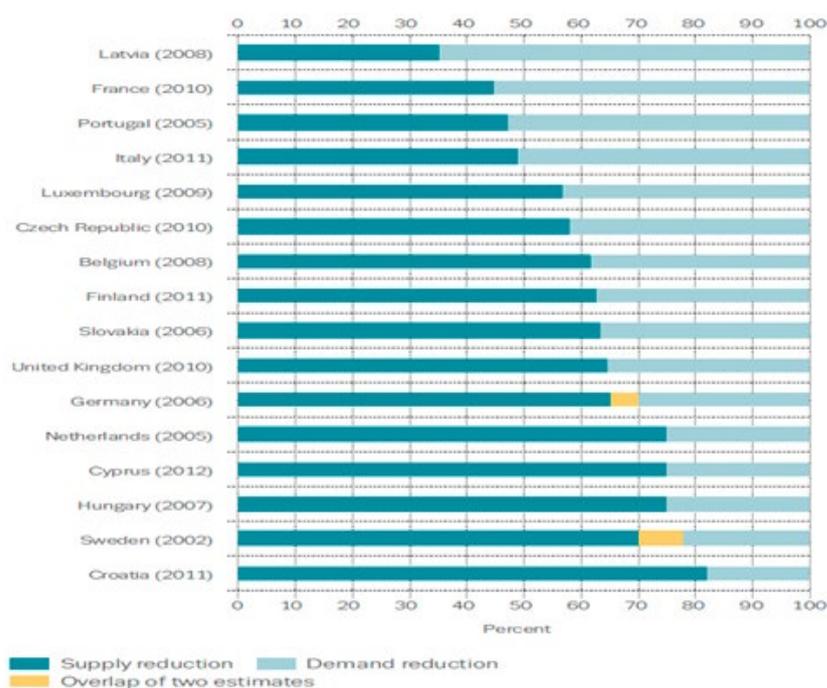
In this report, public expenditure on drug supply reduction comprises the funds spent by general government with the broad purpose of reducing the availability with the support of the police, law courts and prison services geared towards combating the illegal drug phenomenon, as defined by Eurostat (2011). In general, police services comprise, among others, the regular and auxiliary policing of ports and borders, coast guards and customs, as well as road traffic regulations and supervision. The services provided by law courts comprise the operation or support of civil and criminal law courts and judicial systems, the prosecution service, fine enforcement and probation systems. Prison services comprise the activities of prison administration and the operation or support of prisons and other places for the detention or rehabilitation of offenders, such as prison farms, workhouses, reformatories, borstals, forensic wards, etc. (Eurostat, 2011).

In the case of public expenditure on drug supply reduction initiatives, the vast majority of resources will be spent on enforcement targeting producers and dealers, but may also include legal action targeting 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 gross domestic product (GDP). Since 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 drug-related public expenditure in most countries. Of the 16 countries which produced 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 expenditure on supply reduction.



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

Source: EMCDDA, 2014b

Analysis has also shown that funds allocated to drug-related initiatives account for only a small proportion of the overall public expenditure on the public order and safety sector. 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 total public expenditure in this sector. This proportion compares to the proportion of drug-related spending on the health and social protection sectors. The proportion of drug-related expenditure on these items accounted for less than 1% of total public spending on health and social protection during 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, as part of public order and safety activities, than to demand reduction initiatives as part of overall public health activities (EMCDDA, 2008). Annually, EMCDDA reports the most recent estimates available for national drug-related public expenditure in percentage of the gross domestic product (GDP), in the European Union countries, Norway and Turkey. When available, EMCDDA reports also the proportion of funds spent on supply reduction initiatives (<http://www.emcdda.europa.eu/countries>).

# Steps in cost estimation and analysis

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**C**larifying definitions, improving estimation methods, agreeing on best practices and finding reliable, standardised data will enhance the utility of public expenditure estimates, as analysis over time and across policy areas and countries can be improved (Single, 2009). Better quality data and further methodological developments are needed. To this end, we list below some recommended, general methodological steps in cost estimation and analysis.

## Defining the scope and objects

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

## Making an inventory of service providers

Secondly, it is necessary to identify the public entity or institutions responsible for the provision of drug-related services – in the case 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 made an inventory.

## Mapping financing entities

The third step is then to identify who finances these service providers. The starting point for a public expenditure analysis is accordingly the different public authorities which fund the respective aspects of the drug policy. Irrespective of the governmental structure, expenditure by 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 can be challenging, as the entities in charge of providing public

services are not always obvious and easy to identify. For instance, when drug treatment services are 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, along with most international organisations concerned with policy evaluation, includes the provision of services in the main function that the funds are used for, even where the provider is less obvious. In this case, public expenditure on drug treatment provided in prisons should be excluded from expenditure estimates for supply reduction services and accounted for as drug-related health expenditure. Sometimes, provision will be the responsibility of private entities while financing is a government responsibility.

It should be noted, however, that the same service may have multiple policy purposes and double counting should be avoided. For instance, in the case of social reintegration programmes in deprived neighbourhoods, 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 should also be accounted for as health spending in demand reduction expenditure). For public accounting purposes the same funds should not be counted twice. Therefore, researchers will have to include this spending only once, choosing to record it under either preventive health or crime prevention. Sometimes, making a decision is difficult and the best way to deal with such situations is to guarantee that researchers document the different choices and assumptions they make.

## Data collection

The fourth step is to determine a strategy for collecting the required data on public expenditure. In order to obtain the relevant information, analysts will have to examine policy documents and accounting data. It is also recommended that interviews be conducted with the major stakeholders in the field, as a way to obtain better information about where financial data might be available, and to search for international data sets.

## Classifying and identifying data on drug-related spending

It is essential to classify public expenditure according to the purpose for which the expenditure is intended (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 the fact that drug-related expenditure on supply reduction initiatives comprises funds spent with the aim of combating the illegal drug phenomenon through the police, law courts and prison service, the classification commonly used in international comparisons is the Classification of the Functions of Government.<sup>1</sup>

- ▶ The Classification of the Functions of Government (COFOG) provides a useful framework for classifying public spending according to its purpose. Under COFOG, most drug control policy expenditure is included in 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” (Eurostat, 2011).
- ▶ Reuter (2006) relates public expenditure to the supply and demand sides of the market. He counts public spending on supply reduction under “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 other words, enforcement programmes will make drug producing, trafficking or dealing more expensive, because they either bring about an increase in the unitary costs of production or introduce greater risk into the business (Costa Storti and De Grauwe, 2009).

These two classification systems are substantially different. COFOG has been co-designed by the statistical office of the European Union and the European Commission, with well-defined concepts and data collection methodologies. Annual mandatory data collection has been implemented in every European Union member state since early 2000. The system covers all functions provided and financed by governments. Drug-related activities are among the overall tasks provided and financed by the public sector, but there are no specific methods specified or data collected on drug-related expenditure. Drug-related expenditure is embedded in broader items, such as public expenditure on public order and safety, security, health, education or social protection. Conversely, the Reuter’s classification was designed to organize

public expenditure spent with the main aim of tackling the drug phenomenon. However, no systematic data collection has taken place.

The research community has not formally adopted any of these classification systems. However, as Eurostat publishes data annually in accordance with the COFOG classification, their system is frequently used. Eurostat publishes data on public spending with the purpose of guaranteeing public order and safety, which is split into the above-mentioned classes. Researchers still have to opt for criteria and models to disentangle drug-related spending within these overall expenditure classes.

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

In the event that not all the required data are available in international data sets, national databases should be mapped. Every country has different structures for drug control services, provision and financing. National data mapping can be achieved in different ways: information from registration systems, annual reports, interviews with key experts and/or contacts working in this field (De Ruyver et al., 2007). Detailed mapping of available data can be demanding and makes intensive use of resources. However, it is a fundamental step for any estimate of public spending on drugs control.

## 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 (labelled expenditure). Often, however, the majority of drug-related expenditure is not identified (unlabelled expenditure) and must be estimated using modelling approaches. Total drug-related expenditure is the sum of labelled and unlabelled drug-related expenditures (EMCDDA, 2016).

1. National estimates sometimes use alternative definitions. See (Lievens et al., 2016) or (Kopp, 2006) for further details.

Since labelled expenditures are clearly identified in budgets, calculation methods are not required. Time series data are often available for labelled expenditure. The biggest challenge when data on labelled expenditure are compiled is to ensure complete mapping of all entities in charge of providing these services, as they can be spread across different government levels. Depending on the national structures, expenditures 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 necessary to estimate these different expenditures and the modelling is based on either a top-down or a bottom-up approach. Frequently, these estimates require the use of activity data to develop estimates (for example, number of offences, offenders, criminal cases, prisoners, etc.)

## Modelling unlabelled expenditure

The top-down modelling approach is mainly used when the data available are embedded in programmes with broader goals and the fraction attributable to drugs can be identified as the proportion of the overall budget. In order to identify this proportion, models lay down objective criteria and calculate attributable fractions.

Unlabelled drug-related expenditure = Overall expenditure × Attributable fraction

There is no general methodology to determine attributable fractions also known as repartition keys. In practice, the appropriate repartition key is determined by the object of the estimate, data availability and the modelling approaches available. Repartition keys are determined in different ways on the basis of information from activity data, extracted from registration systems, annual reports and/or contacts working in this field (De Ruyver et al., 2007). When determining attributable fractions, the data used should preferably be publicly available or, even better, be stored within international databases. This can guarantee the possibility of producing similar estimates in the years that follow and in other countries.

Appendix 3 summarizes the information and data available in the most relevant international databases that can be used to estimate unlabelled public expenditure on supply reduction. It describes the activity data reported, the reporting countries and time periods.

This Appendix reports the data available concerning the annual statistics on national public expenditure on police, law courts and prisons reported by Eurostat. These data include not only expenditure on drug-related initiatives, but the total spent to tackle all types of crime. Therefore, to disentangle drug-related expenditure and built attributable fractions, activity data shall be required.

For instance, the number of drug-law offenders in prison may allow estimating the proportion that convicted prisoners for drug-law offences represent from total prison population, and therefore to approach the proportion that drug-related expenditure on prisons represents from total prison spending; or the proportion that drug-related cases handled by the police, by prosecutors or by drug-law courts on the total number of cases handled by these institutions may allow starting approaching their drug-related costs.

To design attributable fractions, models use the support of data on crime, police, law courts or prisons activity. Appendix 3 presents information and data by groups of variables. These groups encompass total public expenditure, drug-related public expenditure, supply reduction public expenditure; drug law offences; crime reported by the police, drug-related crime, conviction statistics and prison population. Within groups, variables directly relevant are listed. For each variable, data available are listed by source, country and time period. Finally, this annex reports the number of observations available for each variable. The relevant sources include data from the Council of Europe, EMCDDA, EUROSTAT, Univeristee de Criminologie et de Droit Penal de Lausanne and the UNODC.

Despite that data available are still referent to a short period of time and that data are still missing in many countries/years, gathering available information shall allow developing better methods and more accurate estimates in the future.

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 easily applied.
- ▶ 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/an increase in service usage (for instance, when there are less/more drug-related crimes committed in a certain year than expected) and how these costs change over time.

There are, however, some limitations associated with a top-down approach. Firstly, it does not clearly identify the different factors that may drive the costs and therefore often masks the underlying factors that determine why unit costs vary within a single, yet heterogeneous, services group. The criteria laid down for estimating attributable fractions do not always take into account

all of the characteristics that may impact the total costs, which means that cost functions are often simplified. These estimates are therefore often not very precise. Nevertheless, they are frequently used and provide valuable proxy indicators for average costs.

An alternative method of estimating drug-related expenditure is to base estimates on the cost of providing one unit of public service, known as the bottom-up modelling approach. 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? Considering the different costs borne by the government for managing a prison facility, 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, taking into account the different costs associated with each type of detainee, based on the different lengths of prison sentences, different security levels, etc. To obtain the total expenditure on drug control policy, all the cost elements should be identified and totalised.

The bottom-up approach 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 allow potential errors to be investigated and their impact tested – this facilitates a 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, enable analysts to explore the factors underlying variations and determine whether, for example, some service users account for a disproportionate share of the 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 concerning both the type of costs associated with the provision of each service (full knowledge of the production function of each public service) and the unit cost of each of the production factors.

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

### Reporting the value of estimates

The basic format used to report the value of estimates is monetary value in nominal terms. However, to permit comparability over time, if reported in monetary units estimates should be adjusted for inflation.

In addition, some authors report the value as a percentage of GDP. This way of presenting the results considers the economic dimension of a country. It is likely that drug-related spending is higher in a country with 85 million inhabitants than in a country with 10 million inhabitants. The same holds for a higher income country (EMCDDA, 2008). For these reasons, reporting the value of estimates as a percentage of GDP is a valid choice, since it takes account of both the inflation problem and the size and level of a country's income.

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 measurements of drug-related public spending facilitates the validation of the data through cross-verification and increases the economic significance and utility of the estimates.

# Examples of sectorial models

In addition to collecting labelled public expenditure data, several examples exist of models applied to identify unlabelled expenditure on drug control in the national contexts. Different authors have applied different definitions, data sets and models to estimate items of drug-related expenditure. In this section, examples of the definitions, data and models are provided. The section aims to present the models utilised to estimate unlabelled drug-related spending on various types of supply control initiatives.

## Police

Public spending on drug-related police services is probably best identified using a top-down approach.<sup>2</sup> In order to disentangle this expenditure from total public expenditure on public order and safety, as published by Eurostat, attributable fractions has been calculated with the help of activity data. Authors have used auxiliary data to create these fractions, for instance data on drug-related offences in proportion to the total number of offences. The following are concrete examples of variables available in national and international data sets, which have all been used separately to estimate attributable fractions:

- (1) The number of drug-related crimes per 100 000 population.
- (2) The number of drug-related cases reported by the police out of the total number of police cases.
- (3) The time the police forces spend on combating the drug phenomenon in proportion to their total working time.

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

A concrete example is provided by the estimates for Italy. Genetti (2014) estimated drug-related public expenditure for police forces based on the amount of time that staff spent on drug control in 2011: possession of illicit drugs for personal use; production,

2. Although it is also possible to use a bottom-up approach, since police activity is normally financed by the central government budget, a pragmatic approach frequently used is to prepare estimates based on 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 comparable data are available for most European countries.

trafficking and dealing in 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 that was spent on drug-related police activities from the total spending on police activity. Within the funds allocated for supply reduction, 14% was spent on drug-police activity, while law courts and prisons absorbed the remaining 21% and 65% respectively.

Moolenaar (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 police time spent on this work. Moolenaar calculated the average duration of each type of criminal investigation firstly by type of criminal activity (assuming that different criminal activities have different investigation costs – based on an assessment of the severity of the crime) and secondly by the number of cases registered for each criminal activity.

## Customs

With regard to customs services, the share of customs 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 in drug control activities forms the basis for the calculation. These estimates are then applied to the total expenses of the customs administration (minus any labelled expenditure specifically targeted towards this activity). It should, however, be noted that most customs officers do not exclusively devote their working time to drug control activities, so, ideally, the percentage, or the average, of working time devoted to drug control should be estimated.

Kopp and Fenoglio (2002) estimated the drug-related expenditure of customs services based on the proportion of customs officers allocated to combating illicit drug trafficking within the total number of customs officers. This proportion constituted the attributable fraction applied to the total customs budget. The authors concluded that, in 2000, drug-related spending on customs services represented approximately 10% of total drug-related spending in France. As these authors pointed out, omitting costs such as those of detection equipment or detection dogs may constitute a relevant limitation, since the costs of detection equipment may have a strong impact on relatively small budgets such as that for customs.

Lievens et al. (2016) estimated drug-related expenditure by customs based on the proportion that drug-law violations represented in the total number of violations registered by the ordinary customs services, investigation services and motorised brigades. They used a top-down approach based on the number of drug-law offences in proportion to the total number of 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 total national expenditure on law courts based on the following activity data:

- (1) The proportion of drug-related offences with regard to the total number of offences.
- (2) The proportion of drug-related convictions with regard to the total number of convictions;
- (3) The proportion of people imprisoned for drug-related offences with regard to the total number of prisoners.

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

In Croatia, drug-related spending on the courts covered drug-related cases prosecuted by both the State and the courts (Budak et al., 2013). A top-down approach was used based on estimates of the number of drug-related crimes as a proportion of the total number of crimes registered by the police. The researchers recognised that these estimates were crude, but they could not obtain a better proxy for this particular component of the estimates.

In Sweden, expenditure on drug-related prosecutions and court cases (district court, court of appeal and

supreme court) was estimated based on a bottom-up approach, which combined the number of cases and the average cost per case (Ramstedt, 2006). The data were obtained from a judicial system official. It should be noted that the average case cost was not recorded by type of crime, instead the average for all types of crime 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 was estimated based on the situation in the district courts (9%). Regarding the range of the estimates it should be noted that the author included, as an upper limit for estimates, a specific percentage (30%) of the costs of tackling other crimes, as they may have been committed under the influence of drugs.

## Prisons

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

EMCDDA (2014) provides an example of how public expenditure on drug-law offenders in prisons can be estimated. Based on data for public expenditure on prisons provided by Eurostat and data on the number of offenders provided by the Council of Europe, the proportion of prisoners sentenced for a drug-law offence as their main offence was applied to the total public expenditure on prisons. A range of estimates was calculated, with low estimates taking into consideration only 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. On applying these percentages to the entire EU for the year 2010, the estimated expenditure was within the range of 3.7 billion euros to 5.9 billion euros.

# Examples of national studies

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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 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 vary substantially across countries, as do the data and methods applied for estimating unlabelled expenditure. The national estimates presented below are therefore not directly comparable. They nonetheless provide examples of useful models and estimates and illustrate some of the approaches applied.

## Croatia

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

For the period 2009-2012 the study suggested that public expenditure on law enforcement constituted about 73% of total drug-related public expenditure by central government, whereas prevention, treatment, social reintegration and harm reduction represented 12%, 13%, 0.3% and 2%, respectively. When comparing unlabelled expenditure for the different programmes in a single year (2011), unlabelled expenditure on law enforcement represented 82% of total unlabelled drug-related expenditure. On the other hand, law enforcement accounted for 4% of the total labelled expenditure. Overall, the estimates indicated that drug-related expenditure stood at 0.2 % 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, Caulkins & Lievens, 2012). It further developed upon two earlier studies (De Ruyver et al. 2004, 2007) by carrying out a new and more refined estimation of public expenditure to combat illegal drugs. The study combined a top-down and a bottom-up approach for estimating public expenditure. The vast majority (98.45%) of the expenditures were identified as a result of the top-down approach. Public expenditures identified through the bottom-up approach (1.55%) concerned organisations that depended on the government for most of their funding.

The total drug-related expenditure was broken down by programme: law enforcement, treatment, prevention, harm reduction and other. For 2008, public expenditure on law enforcement constituted 45% of the total expenditure. This was slightly less than the spending on treatment (49%) and substantially more than that on prevention (4%), harm reduction (0.8%) and other (1.2%). When estimated in the same way in 2004 and 2008, public expenditure on law enforcement showed a substantial increase, both nominally (from 186 038 337 euros to 243 000 490 euros) and in relation to the other programmes (it increased by 6 percentage points).

## Italy

For the purpose of estimating drug-related public expenditure in Italy (Reitox Italian Focal Point, 2014), a model was developed to analyse the flow of cost information from various 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 (law enforcement costs, social and health costs). To determine the costs of law enforcement, different sources of information were used: data concerning traffic control and traffic accidents; police data on people caught with drugs for personal use; data on the number of convictions for drug trafficking; and data on crimes related to drug trafficking.

For 2011, the cost of drug-related law enforcement was estimated at 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 represented 21.3%, 13% and 0.7%, respectively.

## France

In a French study the method relied on analysing activity records, wherever available in the agencies concerned (Kopp, 2015). The total expenditure for drug-related activities was then aggregated. The top-down approach applied in this case provided an indication of the proportion of expenditure for drug control related activities compared to the overall expenditure of all the institutions and agencies concerned. To obtain an estimate, a fraction was applied to the total staff and routine operating costs of the agency concerned. In the year 2010, for example, 10% of police activities were attributable to drug control activities, which involved 60 police units. In this example, police expenditures attributable to drug-related activities were calculated by multiplying the total expenditure of the police services by this fraction of 10%.

A bottom-up approach was also adopted, based on the working time of staff performing support functions in connection with drug-related activities or the equipment used, as recorded by the agencies concerned. For example, the time spent giving prevention talks in schools and the time spent by the police forces on alcohol tests were included in the calculations.

## Luxembourg

Since 1999, the social costs of drugs have been estimated annually in Luxembourg. These estimates take account of the total costs to public and private agents of the consequences of drug use and trafficking. Public spending is analysed in five sectors: prevention, treatment, harm reduction, law enforcement and research. In the law enforcement field, as in other fields, the analysts face the twofold challenge of accounting for drug-related spending, as financed by different general government levels, 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 in 1999; prevention, treatment and harm reduction expenditure amounted to 59%, whereas research and other stood at 2%. Overall, drug-related public expenditure represented 0.013% of GDP.

## Russia

For Russia, public expenditures on law enforcement agencies and on the judicial system were estimated as part of a social study (Potapchik and Popovich, 2014). The comprehensive model encompassed private and indirect costs (the cost for the individual and the

costs due to loss of productivity) and public spending, including direct spending on supply reduction services. These were disaggregated into spending on law enforcement and on criminal justice, which included factors such as law enforcement agencies and the federal drug control service.

Public expenditure on supply reduction services was estimated using a top-down approach and various sources of information: police data on persons 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 was no published information on the fraction attributable to drug-related crime in Russia, the fraction estimated in a study by the US Office of National Drug Control (22%) was employed with a view to estimating the law enforcement and judicial system expenditures.

## Portugal

There are few examples of attempts to estimate the impact of changes in the legal system on drug-related public expenditure and drug-related budgets. Gonçalves et al. (2015) are an exception as they conducted a comprehensive social cost analysis of the situation before and after decriminalisation in Portugal. The authors found a significant reduction in the non-health related costs of drug policy between 2000 and 2004, in particular in the legal system (direct costs). Although these observations highlight significant changes, prudence is still called for in concluding causal relationships with the new Portuguese National Strategy for the Fight against Drugs (NSFAD).

## Other national studies

There are other examples of public expenditure studies additional to those mentioned above. For instance, Mostardt et al. (2010) estimated public expenditure in 2006 for Germany using data from Eurostat and the COFOG system, concluding that supply reduction represented close to 65% of the total drug-related public spending; Rigter (2006) estimated that 75% of public expenditure was spent on law enforcement in the Netherlands; Ramstedt (2006) presented public expenditure estimates for Sweden, whereas public spending on supply reduction represented between 70 to 76% of the total; and Lievens et al. (2016) published a social cost study, including estimates of public expenditure to deal with legal and illegal drugs in Belgium. There are also US (ONDCP, 1989-2015) and Australian (Moore, 2008) estimates. Despite substantial differences, the studies may all be viewed as necessary first steps in national drug policy evaluations.

# International databases used to model drug-related public expenditure

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**T**he only available international compilation of updated estimates of drug-related public expenditure on supply reduction is published by the EMCDDA for the EU member states<sup>3</sup>, reporting the available national estimates of total drug-related spending and spending separated into supply and demand reduction initiatives. The scope for cross-country comparisons is nonetheless limited because the estimates often do not use comparable definitions, data sets or methodologies.

Another database of particular relevance is Eurostat. This is partly because it is based on a consistent categorisation system and on internationally 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 the early 1990s. This data source has proved to be relevant and amenable to a wide variety of analytic applications. However, the data set does not comprise data concerning 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 according to the 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 international reporting concerning supply reduction factors such as: drug related crime (EMCDDA and the 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). Appendix 3 makes an extensive description of data published by international institutions.

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3. See <http://www.emcdda.europa.eu/topics/drug-related-public-expenditure>.

# Conclusions

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- ▶ 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 what purposes such expenditure is incurred.
- ▶ 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 be particularly appropriate in times of austerity.
- ▶ Estimates exist for 16 EU countries, out of the 30 potential reporting countries (EMCDDA, 2014b). Estimates suggested that drug-related expenditure ranged from 0.01 % to 0.5 % of GDP. 12 out of the 16 reporting countries allocate the largest share of drug-related public expenditure for supply reduction.
- ▶ Data availability is one of the main limitations in this field. The use of international databases is recommended, whenever possible. These data sets employ broadly accepted concepts and definitions providing better comparable data. Sometimes, however, national data sets can contain 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 based on either a top-down or a bottom-up approach. Using both approaches as complementary is advantageous but expensive. A list of advantages and limitations for both alternatives is provided, in addition to empirical expenditure studies for supply reduction activities in some European countries.
- ▶ While recognising the limitations imposed by the data sets currently available, this report provides examples of current practice and, in so doing, suggests areas of future focus for desired methodological development. It is hoped that the estimation of drug-related public expenditure on supply reduction initiatives and policy evaluation will move forward in Europe. For continued improvements to take place, however, it is essential that a network of experts is developed and maintained. Partnerships should be extended and maintained with the goal of developing good practices, standards and guidelines in this field.

# Recommendations

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1. Improving estimation methods with further methodological developments; agreeing on best practices and; finding reliable standardised data will enhance the utility of public expenditure estimates, as that will permit analysis over time and across policy areas and countries.
2. Improved data quality and developing relevant data sources is needed for conducting more precise estimations of spending on drug control measures and to measure the impact of drug control policies. One option is to develop guidelines for data collection and economic modelling of evaluations.
3. It is essential to classify public expenditure based on the purpose for which the expenditure is intended. It is therefore useful to use a consistent categorisation system, such as the international Classification of the Functions of Government (COFOG).
4. Cross-country comparisons are important, but they are only possible with a common methodology of public expenditure estimates. International data sets and modelling techniques need to be expanded and improved in order to increase the capacity to carry evidence based on drug policy evaluations in the drug field.
5. A methodology using a set of repartition keys according to COFOG categories can be a starting point in order to estimate unlabelled drug-related expenditures. General agreement among all participating countries on definitions and methods will help to improve the comparability of results between countries.
6. Public expenditure studies involve analytical work, which requires adequate human and technical capacities in all relevant stakeholder fields. This is important for obtaining the data quality needed for aggregation and comparison. To achieve this, a network of experts could be established and a working group of experts developed.
7. Developing methods to estimate public expenditure on supply reduction requires effective working partnerships between drug policymakers and specialists in the police, law courts and prisons. Collaboration with public accountancy experts and those in charge of economic modelling is required to guarantee meaningful estimates.

# Glossary

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**Attributable fractions** also known as **repartition keys** are coefficients estimated to help those who estimate drug-related expenditure with the purpose of reflecting the proportion of expenditure allocated to finance drug-related initiatives. Therefore, attributable fractions are designed to accurately isolate drug-spending, when drug-related expenditure is embedded into a broader budgetary structure. There is no general methodology to determine repartition keys. It depends on the case (on the basis of the activity information and data available) (Vander Laenen et al, 2011).

**Cost analysis** provides monetary estimates of the costs of a particular intervention or set of interventions, and also information on the amount of resources (e.g. labour, facility, supplies) used in their provision. The latter information is often used to identify critical cost components of the intervention and to assess whether the costs are affected by changes in key assumptions (Bray and 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 monetise 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 the 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. a 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). Intervention costs are estimated in monetary units, such as the euro. The effect of the intervention can be any policy-relevant outcome that is collected for all interventions under consideration.

**Cost-benefit analysis** converts all types of outcomes to a monetary equivalent, in contrast to cost-effectiveness analysis (Chalk et al., 2013 and Drummond et al., 1997). As a result, the euro value of the intervention's benefits can be directly compared with the euro 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 percentage of programme costs). A related type of analysis is the cost-offset analysis in which future costs or cost-savings are examined. Since 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 programmes should be adopted – namely those programmes whose benefits exceed their costs. Cost-effectiveness analyses can provide a ranking of competing alternatives but not information on the extrinsic value of any single intervention independent of the alternatives (Bray and 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 general government sector units (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. In addition, it 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 the costs of public programmes and interventions (Eurostat, 2011).

**Social costs of illegal drugs** comprise all costs carried by the different sectors of society as a consequence of the illicit drug phenomenon. Public expenditure is only one of the cost elements here. Social cost is the sum of public expenditure, private expenditure and external costs. Private expenditure constitutes, for instance, the money spent by private citizens to purchase illicit drugs. External costs comprise the

costs caused by the consequences of drug use, which can affect anyone in society, including those who do not necessarily use drugs or are involved in drug demand, supply or drug policy. For instance, external costs are the expenditure on drug-related nuisance, expenditure on tackling offences committed under the influence of drugs, losses of productivity or absenteeism associated with either 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).

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# Appendix 1 – Available databases and potential indicators for drug-related public expenditures

## Examples of international databases, which can be used for estimating drug-related public expenditures

Level of estimation	Examples of databases	Estimation data
International	EMCDDA Statistical bulletin and Public expenditure database	<ul style="list-style-type: none"> <li>– 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. <a href="http://www.emcdda.europa.eu/data/stats2015">http://www.emcdda.europa.eu/data/stats2015</a></li> <li>– The EMCDDA also publishes the most recent national data on drug-related public expenditures available in Europe.</li> <li>– <a href="http://www.emcdda.europa.eu/topics/drug-related-public-expenditure">http://www.emcdda.europa.eu/topics/drug-related-public-expenditure</a></li> </ul>
	WHO Database	<ul style="list-style-type: none"> <li>– <b>Global Information System on Resources for the Prevention and Treatment of Substance Use Disorders</b> (includes information about: prevalence and burden of Disease, monitoring and surveillance; policy; treatment system and services; pharmacological treatment; prevention programmes for substance use and related harm; and human resources and civil society involvement).</li> </ul>
	Eurostat	<p><b>Public expenditure according to the Classification of the Functions of Government (COFOG)</b></p> <p>COFOG published data according to two levels of classification (United Nations, 2008). The first classifies expenditure into 10 general functions, one of which is “Public order and safety”. The second classifies expenditure into 69 groups, in which there are three indicators of interest: police service, law courts and prisons. The definitions below are provided by the UNODC.</p> <p>From the Public order and safety section:</p> <p><b>Police services</b></p> <ul style="list-style-type: none"> <li>– 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.</li> <li>– 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 programmes.</li> </ul>

Level of estimation	Examples of databases	Estimation data
		<p><b>Law Courts</b></p> <ul style="list-style-type: none"> <li>– 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.</li> <li>– Legal representation and advice on behalf of the government or on behalf of others provided by government, in cash or in services.</li> </ul> <p><b>Prisons</b></p> <ul style="list-style-type: none"> <li>– 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.</li> </ul>
	<p><b>UN-CTS (Crime and Criminal Justice Statistics)</b></p>	<p>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 Surveys on Crime Trends and Operations of Criminal Justice Systems). Other data are collected through national surveys implemented by UNODC in co-operation with national governments or are compiled from scientific literature. UNODC attempts to maximise the comparability of the data and estimate regional and global statistics.</p>
	<p><b>SPACE</b></p>	<p>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.</p> <p>Data are collected every two 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 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.</p>

Level of estimation	Examples of databases	Estimation data
	<b>European Sourcebook on Crime and Criminal Justice Statistics</b>	The Sourcebook contains data from 41 European countries regarding their criminal justice systems. The book is structured into 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 are systematically accompanied by texts and notes relating to the specificity of each country and which discuss the different challenges attributed to the comparison of the data.
	<b>Social Expenditure Database</b>	The OECD Social Expenditure Database (SOCX) provides a unique tool for monitoring trends in aggregate social expenditure and analysing changes in its composition. The main social policy areas are as follows: old age, survivors, incapacity-related benefits, health, family, active labour market programmes, unemployment, housing, and other social policy areas.
	<b>ESPAD</b>	Drug abuse prevalence among teenagers in European countries.
<b>National</b>	<b>Database of national statistics</b>	Expenditures of different groups, in which can be found some indicators of interest: police service, law courts, prisons, medical and social services.
	<b>Annual report from Social Services Department</b>	Data on Social Services Department expenditures at regional level and the 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 structural levels. At the first level, government expenditure is broken down into 10 functions. These are then divided into 69 groups (second level of COFOG), which are themselves divided into classes at the third level – the most detailed classification level. COFOG permits an examination over time of trends in government outlays on particular functions (Eurostat, 2011).

The detailed three-level structure of COFOG includes financial flows of 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 system used by the System of National Accounts 1993. COFOG is a useful international classification system for spatial comparison (between countries) and also for time comparison (over time). 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 capital transfers (investment) and current

(non-investment) transfers. Eurostat has published annual data according to the COFOG definitions for the European Union countries since the early 2000s.

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 (namely prevention, treatment, enforcement and harm reduction). Reuter's programme division is the classification of the recipients (NPOs) with drug-policy programmes.

An 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 COFOG, as proposed by Eurostat. The COFOG classification system guarantees annually available data for most European countries, according to harmonised 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 health
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

## Appendix 3 – Summary tables: data from international databases

**Table 1 - Public expenditure**

Data and Statistics	Dataset	Type of information	DATABASE	YEARS	Number of observations(*)
Public expenditure	Expenditure of the general government	Law Courts	Eurostat, European Union (EU)	1995-2015	Europe (31) = 473/651
		Police Services			Europe (31) = 473/651
		Prisons			Europe (31) = 473/651
Drug-related public expenditure	Public expenditure on supply reduction	Total drug-related public expenditure	Country Drug Profiles, EMCDDA, (EU)	Last year available	EU (30) =20/30
		Percentage spent on supply reduction			
		Percentage spent on demand reduction			

(\*) The number of observations reports the number of data records, taking into account the territory; countries and years available. The ratio compares the number of effectively reported observations with the total number of records, if no data were missing. Example: Europe (44) = 28/368: in Table 4, the conviction statistics of the European Sourcebook of crime and criminal justice statistics reports 28 data records, for the community sanctions imposed to drug offences in 2010, compared to the 368 data records that would exist if no data were missing, in the region Europe (which accounts with 44 countries).

**Table 2 – Drug law offences**

Data and Statistics	Dataset	Type of information		DATABASE	Years	Number of observations(*)	
Drug law offences	Drug Law Offences	Number of offences	Offences		EMCCDA (EU)	1995-2014	EU (30) = <b>364/600</b>
			Offender				EU (30) = <b>262/600</b>
		Offences by Types	Use			2004-2013	EU (30) = <b>230/300</b>
			Supply				EU (30) = <b>238/300</b>
		Offences by drug	Cannabis	Total		2004-2013	EU (30) = <b>203/300</b>
				Use		2005-2013	EU (30) = <b>163/270</b>
				Supply			EU (30) = <b>160/270</b>
			Heroin	Total		2004-2013	EU (30) = <b>186/300</b>
				Use		2005-2013	EU (30) = <b>159/270</b>
				Supply			EU (30) = <b>160/270</b>
			Cocaine	Total		2004-2013	EU (30) = <b>185/300</b>
				Use		2005-2013	EU (30) = <b>159/270</b>
				Supply			EU (30) = <b>176/270</b>
		Crack	Total	2005-2013		EU (30) = <b>50/270</b>	
			Use			EU (30) = <b>47/270</b>	
			Supply			EU (30) = <b>37/270</b>	
		Amphetamine	Total	2005-2013		EU (30) = <b>163/270</b>	
			Use			EU (30) = <b>74/270</b>	
			Supply			EU (30) = <b>87/270</b>	
		Methamphetamine	Total	2005-2013		EU (30) = <b>98/270</b>	
			Use			EU (30) = <b>74/270</b>	
			Supply			EU (30) = <b>87/270</b>	
		Ecstasy	Total	2005-2013		EU (30) = <b>162/270</b>	
			Use			EU (30) = <b>144/270</b>	
			Supply			EU (30) = <b>153/270</b>	
		LSD	Total	2005-2013		EU (30) = <b>127/270</b>	
			Use			EU (30) = <b>108/270</b>	
			Supply			EU (30) = <b>95/270</b>	

**Table 3 – Prison population**

Data and Statistics	Dataset	Type of information	DATABASE	YEARS	Number of observations(*)	
Prison population	Persons held in institutions for drug users offenders outside penal institutions	Availability of institutions for drug users offenders, outside penal institutions	Space I, Council of Europe (CoE)	2014	CoE (47) = 28/53	
	Situation of prison population	Population on 1st January		Total number of prisoners (including pre-trial detainees) Total number of detainees held in remand institutions/ sections (pre-trials) Total number of prisoners held in institutions serving a sentence Total capacity of penal institutions Surface area per prisoner (m <sup>2</sup> )	2009 & 2014	2009: CoE (47) = 343/424 2014: COE (47) = 255/265
		Total number of prisoners (including pre-trial detainees)				
		Total number of detainees held in remand institutions/ sections (pre-trials)				
		Total number of prisoners held in institutions serving a sentence				
		Total capacity of penal institutions				
		Surface area per prisoner (m <sup>2</sup> )				
	Evolution of prison population	Total number of prisoners		Prison population	2000-2014	CoE (47) = 707/795
		Prison population				CoE (47) = 683/795
	Legal status of prison population	Untried detainees (no court decision)"		Detainees found guilty but no sentence yet Sentenced prisoners (appealed or can do so) Detainees with no final sentence, but serving a prison sentence in advance Sentenced prisoners (final sentence), of which: – fine defaulters – in revocation, suspension or annulment of the conditional release or probation Other cases Total number of prisoners (including pre-trial detainees)	2009 & 2014	2009: CoE (47) = 274/424 2014: CoE (47) = 315/477
		Detainees found guilty but no sentence yet				
		Sentenced prisoners (appealed or can do so)				
		Detainees with no final sentence, but serving a prison sentence in advance				
		Sentenced prisoners (final sentence), of which:				
		– fine defaulters				
		– in revocation, suspension or annulment of the conditional release or probation				
		Other cases				
Total number of prisoners (including pre-trial detainees)						

Data and Statistics	Dataset	Type of information	DATABASE	YEARS	Number of observations <sup>(*)</sup>
	Main offence of sentenced prisoners (Final Sentence)	Drug offences		2009 & 2014	CoE (47) = <b>88/106</b>
	Lengths of sentences imposed (final sentenced prisoners)	Length of the sentences by month, years or lifetime		2009	CoE (47) = <b>405/583</b>
				2014	CoE (47) = <b>557/689</b>
	Prison population (including pre-trial detainees): stock	Prison population Stock – Total	European Sourcebook of crime and criminal justice, Université de Lausanne	2003-2011	Europe (44) = <b>387/414</b>
		Prison population Pre-trial detainees			Europe (44) = <b>356/414</b>
	Convicted prison population by type of offence	Total criminal offences		2006 & 2010	Europe (44) = <b>88/92</b>
		Drug offences (of which %)		2010	Europe (44) = <b>38/46</b>
		Convicted prison population in 2010 Drug offences: Total		2006 & 2010	Europe (44) = 46/92
	Sentenced persons held in prisons	Drug Offences		UNODC	2010-2012
		Drug Trafficking	Europe (26) = <b>36/81</b>		

**Table 4 – Cases registered by the police, prosecutors and law courts**

Data and Statistics	Dataset	Type of information		DATABASE	YEARS	Number of observations(*)	
Police statistics	Crime Recorded by the Police	Total		Eurostat	1993-2007	Europe (36) = 536/585	
		Unlawful acts involving controlled drugs or precursors			1993-2007	Europe (36) = 486/585	
					2008-2014	Europe (39) = 275/287	
	Drug-Related Crimes at the national level, number of police-recorded offences	Total		UNODC	2003-2008	Europe (40) = 215/258	
		Drug Possession				Europe (21) = 101/138	
		Drug Trafficking				Europe (37) = 175/240	
	Police Statistics-Offences/Offenders	Offences	Criminal Offences		European Sourcebook of crime and criminal justice statistics	2003-2011	Europe (42) = 347/387
			Drug Offences				Europe (42) = 333/387
			Drug Trafficking				Europe (41) = 269/387
		Offenders	Criminal Offenders				Europe (42) = 263/396
Drug Offenders			Europe (42) = 245/396				
Drug Trafficking			Europe (42) = 190/396				
Conviction statistics	Criminal cases handled by the prosecuting authorities	Output cases: Total		European Sourcebook of crime and criminal justice statistics	2003-2011	Europe (42) = 218/396	
		Percentage brought before a court of the total output of criminal cases handled by the prosecuting authorities				Europe (42) = 198/396	
		Output cases by offence group	Drug Offences		2010	Europe (42) = 33/88	
			Drug Trafficking			Europe (42) = 25/88	
	Convictions Statistics- Persons convicted	Criminal offences		European Sourcebook of crime and criminal justice statistics	2003-2011	Europe (42) = 293/369	
		Drug offences				Europe (42) = 272/369	
		Drug trafficking				Europe (42) = 193/369	
	Total persons receiving sanctions/ measures	Criminal offences		European Sourcebook of crime and criminal justice statistics	2006	Europe (41) = 203/473	
		Drug offences			2010	Europe (41) = 176/602	
		Drug trafficking			2006	Europe (41) = 175/473	
					2010	Europe (41) = 158/602	
					2006	Europe (41) = 113/473	
					2010	Europe (41) = 104/602	
Community sanctions and measures imposed	Criminal offences		European Sourcebook of crime and criminal justice statistics	2010	Europe (44) = 52/368		
	Drug offences				Europe (44) = 28/368		

# Acronyms

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**Council of Europe (47) = CoE(47):** Albania, Andorra, Armenia, Austria, Azerbaijan, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Republic of Moldova, Monaco, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, Russian Federation, San Marino, Serbia, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, "The former Yugoslav Republic of Macedonia", Turkey, Ukraine, United Kingdom

**European Union (30) = EU(30):** Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Turkey, United Kingdom

**Europe (21):** Belarus, Bulgaria, Czech Republic, Hungary, Poland, Romania, Finland, Iceland, Lithuania, Norway, Sweden, United Kingdom, Albania, Croatia, Malta, Slovenia, Belgium, France, Liechtenstein, Luxembourg, Switzerland

**Europe (26):** Bulgaria, Czech Republic, Poland, Romania, Russian, Denmark, Estonia, Finland, Ireland, Latvia, Lithuania, Norway, Sweden, United Kingdom, Andorra, Greece, Italy, Malta, Portugal, Serbia, Slovenia, Austria, Liechtenstein, Monaco, Netherlands, Switzerland

**Europe (31):** Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Turkey, United Kingdom

**Europe (36):** Europe (31) + Liechtenstein, Montenegro, TRF-Macedonia, Serbia, Turkey

**Europe (37):** Europe (21) + Republic of Moldova, Russian Federation, Slovakia, Ukraine, Denmark, Estonia, Ireland, Bosnia-Herzegovina, Italy, Montenegro, Portugal, Serbia, Spain, TRF- Macedonia, Germany, Monaco

**Europa (39):** Europe (36) + Albania, Bosnia-Herzegovina, Kosovo

**Europa (40):** Belarus, Bulgaria, Czech Republic, Hungary, Poland, Moldova, Romania, Slovakia, Ukraine, Denmark, Estonia, Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, United Kingdom, Albania, Bosnia-Herzegovina, Croatia, Greece, Italy, Malta, Montenegro, Portugal, Serbia, Slovenia, Spain, TRF- Macedonia, Austria, Belgium, France, Germany, Liechtenstein, Luxembourg, Monaco, Netherlands, Switzerland

**Europa (41):** Europa (42), except Luxembourg

**Europe (42):** Europa (31) + Albania, Armenia, Bosnia-Herzegovina, Georgia, Kosovo, Moldova, Russia, Serbia, TRF- Macedonia, Turkey, Ukraine

**Europe (44):** Europe (42) + Azerbaijan, Montenegro

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Evaluating drug policy is an integral part of a cost-efficient approach to tackle illicit drugs. This report takes a first step towards a systematic analysis, by examining a set of representative attempts to estimate public expenditure on supply reduction interventions. It proposes a common set of definitions, aiming to establish a common basis for understanding this topic and facilitating comparability in three main dimensions: time, policy and countries. Although it is mainly confined to supply reduction expenditures, in order to set the context, it describes the proportion that total drug-related expenditure represents of national public spending and; presents the balance between demand and supply reduction spending for a number of European countries. Finally, with the aim of facilitating and promoting future empirical expenditure studies and of setting the ground for the development of good practices, relevant data sources and methodologies applied are listed and discussed and examples of sectorial models of public spending are selectively provided.

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The Council of Europe is the continent's leading human rights organisation. It comprises 47 member states, 28 of which are members of the European Union. All Council of Europe member states have signed up to the European Convention on Human Rights, a treaty designed to protect human rights, democracy and the rule of law. The European Court of Human Rights oversees the implementation of the Convention in the member states.