

## Estimating the economic costs of drug abuse in Colombia

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### ABSTRACT

The development of reliable estimates of the economic costs of substance abuse can help to prioritize drug issues and provide useful information to policy makers. Nevertheless, only a few developed countries have so far attempted to carry out such studies.

The present paper reviews the current situation of drug abuse in a developing country widely recognized as a country struggling to overcome a problem of drug production. The data confirm the trend observed elsewhere: countries in which drugs are produced also tend to see rising levels of consumption. On the other hand, it is shown that the lack of systematic information in many areas makes it almost impossible to calculate the costs of drug abuse in countries such as Colombia. Various suggestions are made with a view to correcting some of the problems identified.

### Introduction\*

In assessing the economic costs of drug abuse in Colombia, the following background information on the economic situation of the country should be borne in mind:

(a) At the time of the last census, in 1993, the total population of Colombia was set at 37.7 million. Projected estimates for 2000 place the figure at slightly over 42.3 million, including 12.4 million (29.3 per cent) people between 10 and 24 years of age;

(b) In December 1999, unemployment in the 11 main urban areas of Colombia was estimated at 18.1 per cent. The figure reached 20.1 per cent by the end of March 2000, which meant that some 1.5 million people were out of jobs;

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\*Figures given in the present section were drawn from: Departamento Nacional de Planeación, *Indicadores de Coyuntura Económica Mensual—Febrero de 2000* (Bogotá, 2000); Departamento Administrativo Nacional de Estadística, *Proyecciones Anuales de Población 1985-2015* (Bogotá, 2000); and Departamento Administrativo Nacional de Estadística, *Encuesta Nacional de Hogares 1999* (Bogotá, 2000).

(c) The gross national product for 1998 was estimated at 99,357.6 million United States dollars (\$). For 1999, it was expected to fall by almost 15 per cent to \$84,742 million;

(d) The internal inflation rate for 1999 was 9.2 per cent, while devaluation of the Colombian peso against the dollar reached 22.2 per cent (estimates for 2000: 10 per cent and 17.5 per cent, respectively);

(e) Colombian exports for the period January-November 1999 totalled \$10,325.7 million, while imports amounted to \$9,627.2 million. Exports consisted mainly of oil, coffee, chemical products for industrial use, coal, bananas and flowers. Imports, on the other hand, originated mostly in the United States of America, the European Community and the countries known as the Andean group (Bolivia, Ecuador, Peru and Venezuela);

(f) As estimated by a research team from a leading local university in a recent study,\* drug production in Colombia may have led to illegal exports worth \$2,229 million per year on average over the period 1982-1998. If accurate, the figure would surpass that of coffee, thus making the production of illicit crops the country's most important source of income based on agriculture.

### Drug production estimates for 1995

From the early 1970s, an illegal drug industry gradually evolved in Colombia. Narcotrafficking, the term often used to describe the illicit activity, comprises the growth and trade (export) of marijuana, coca leaf and poppy flower. Only a handful of studies are available that attempt to analyse the economics of drug production. To date, no studies have been published regarding the economics of drug use.

According to one study on drug production [1], crops of marijuana, coca leaf and poppy flower covered some 110,000 hectares (ha) in 1994, that is, an area equivalent to 1.4 per cent of the land devoted to agricultural use in Colombia. On the basis of the same study, a brief review of the economics of each type of drug is given below.

#### *Marijuana*

Although cannabis was introduced at the time of the Spanish conquest, it was only by the 1970s that the illegal production and trade of marijuana began in Colombia as a direct result of the eradication of crops in Mexico. By the end of the same decade, production on the northern coast of Colombia was at a high point. Local government efforts to control the illicit exports, combined with the increasing substitution of imports by the United States, led to a decline in marijuana production and a displacement of the illicit industry towards the production of cocaine and heroin instead. Seemingly, these were regarded as easier products to smuggle, the crops being more difficult to detect and the produce yielding a higher price-to-volume ratio. Nevertheless, by 1994, the production and export of marijuana from Colombia to the United States market was second only to that of Mexico.

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\*Study carried out at the Universidad de los Andes, Centro de Estudios de Desarrollo Económico, quoted in *El Tiempo*, 5 August 2000 (Bogotá), pp. 2-7.

Most of the production of marijuana in Colombia takes place near the Atlantic coast in the northern part of the country around Sierra Nevada de Santa Marta in Magdalena province and Serranía del Perijá in Cesar province. Crops are also to be found in the southern provinces of Cauca and Nariño. Though there was a sharp decline in marijuana exports during the 1980s (their estimated worth is thought to have fallen from \$132 million to \$20 million), production seems to have somewhat recovered in recent years, possibly as a result of an apparent stabilization of the risks involved in smuggling it into the consumer markets. That may have something to do with a relaxation of legal sanctions against use in those markets, as they currently regard it as a soft drug.

By 1994, the total area devoted to growing marijuana in Colombia was estimated at 6,112 ha (down from an average of 10,062 ha in 1982-1987), and the corresponding exports were valued at some \$250 million.

### *Coca leaf*

Traditionally, the quality of local produce has been regarded as lower than that of Bolivia and Peru. As a consequence, until the earlier part of the 1980s, most of the base used in the cocaine production process in Colombia seems to have been imported from Bolivia and Peru, regarded, in that order, as the world's largest producers. Since then, however, the crop area of coca leaf has increased steadily (mainly in the eastern provinces of Meta, Caquetá and Guaviare and in southern Putumayo). In 1994, it was estimated at 45,000 ha, according to one source [2], while other estimates have been as high as 83,000 ha [3]. Depending on the figure of choice, Colombia would have become the third (or second) largest producer of coca leaf in the world.

### *Poppy flower*

Poppy flower was the last drug-producing crop to be introduced into Colombia during the late 1980s. Since then, the area under poppy flower cultivation has rapidly expanded. In 1994, an estimated 20,405 ha were devoted to growing poppy flower, mostly in the central provinces of Tolima and Huila and in eastern Caquetá.

Little more is known about the economics of poppy flower cultivation in Colombia. From the flower, a latex is extracted from which heroin and morphine are obtained. The world's main producers are Myanmar and Afghanistan, followed by Colombia in third place.

## **Substance abuse in Colombia, 1992-1996**

Major studies on substance abuse were conducted in Colombia for the years 1992 [4] and 1996 [5]. They had been commissioned by the Dirección Nacional de Estupefacientes, the national agency in charge of coordinating efforts to prevent and control illicit drug abuse. The same methodology was applied in both studies, although the size of the sample was about twice as large in 1996. The findings presented in the report on the 1996 study [6] are briefly summarized below.

Abuse of illicit drugs in Colombia was estimated to occur, at some time, among 6.5 per cent of the population, or 1,676,924 individuals. Prevalence of abuse was approximately four times higher among males than among females. On the whole,

the extent of abuse increased with the level of instruction. The northwestern province of Antioquia had the highest rate of drug abuse (12.3 per cent). Higher levels occurred in urban areas.

In the year prior to the survey, 1.6 per cent of the population, or 400,768 individuals reported the abuse of at least one illicit drug.

In 1996, as compared with 1992, there was an increase in the abuse of drugs. It was a matter of concern that the estimated prevalence of abuse had doubled in just four years. The main differences were found in women, in 12- to 17-year-olds, and in the unemployed. Geographically, only the Pacific coast region showed a significant change.

The number of new abusers of any illicit drug was estimated at 117,453. For the most part, they were between 12 and 17 years of age, currently attended school, and lived in densely populated urban areas in the coffee-growing region (locally known as *eje cafetero*), and in or around the main cities (Bogotá, Cali and Medellín).

Marijuana had been, and remained, the illicit drug of choice for the majority of abusers. At least once in their lifetime, 5.4 per cent of the population had used it. Abusers of cocaine and basuco were estimated at 1.6 per cent and 1.5 per cent of the population, respectively. Heroin, on the other hand, showed a low prevalence of abuse. It was estimated that 12,566 individuals had used heroin at least once. A comparison of the abuse of illicit drugs by type during the year previous to the 1996 survey with the results of the 1992 survey showed that an increase in the abuse of marijuana (from 0.6 to 1.1 per cent) accounted for most of the difference.

An increase in the abuse of illicit drugs had important implications for treatment and prevention. In that regard, there was an obvious need to focus immediate attention on children and adolescents. In the long run, an increasing number of young abusers of illicit drugs would probably push up demand for treatment in the years to come, since many new abusers gradually sank into addiction.

During the month prior to the 1996 survey, 18.5 per cent of the population under study had used tobacco, and 21.4 per cent had done so within the last year. Proportions varied greatly according to gender and increased with age. The 25- to 44-year-old age group accounted for most of the abusers. A high prevalence of abuse was found among individuals with a low level of instruction, as well as among those with a high level. Prevalence was higher among the employed than among the unemployed. Geographically, drug abuse tended to increase with urbanization. Antioquia and Bogotá showed the highest rates of abuse within one month of, and a year prior to, the survey. In comparison with those of 1992, levels of drug abuse in the two cases were 3 and 4 per cent lower, respectively, the difference being greater among individuals over 25 years of age living in Bogotá or on the Atlantic coast. Students and unemployed individuals increased their use of tobacco.

The proportion of the population using alcoholic beverages of any kind during the year prior to, and within one month of, the survey was estimated at 59.8 and 35 per cent, respectively. Higher levels were to be found among 18- to 44-year-old males with a university education and currently employed. Geographically, a higher prevalence was to be found in Bogotá and the eastern region of Colombia. Use of alcohol tended to be higher in both low- and high-population areas.

The index known as the CAGE index of alcoholism\* shows that an estimated 15.8 per cent of the population between 12 and 60 years of age was at risk of

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\*Based on D. Mayfield, G. McLeod and P. Hall, "The CAGE questionnaire: validation of a new alcoholism instrument", *American Journal of Psychiatry*, vol. 131 (1974), pp. 1121-1123.

becoming alcoholic, while among the group of alcohol users within the last year, the proportion went up to 25.6 per cent. Prevalence was higher among 25- to 44-year-old males currently employed and living in or around Bogotá and in the eastern region of Colombia.

The number of people taking psychoactive pills of any kind during the year prior to the survey was estimated at 182,000, or 0.7 per cent of the population between 12 and 60 years of age. A higher level of abuse was associated with 45- to 60-year-old females (women were found to outpace men by more than two to one), most of them housekeepers living in urban areas. There was an observable decrease in the use of drugs of this type in 1996 as compared with 1992, although methodological difficulties were reported concerning the estimation of lifetime prevalence.

The proportion of the population that abused inhalable substances (such as gasoline, paint, thinner and glue) was estimated at 6.7 per cent, with a higher rate among 25- to 44-year-old males. The Pacific coast and the eastern region of Colombia showed a higher prevalence.

### **Substance abuse among Colombian youth in 1999**

On 20 October 1999, the Colombian Programa Presidencial para Abordar el Consumo de Drogas (Presidential Programme against Drug Abuse), known as RUMBOS, conducted a national survey on drug consumption among 10- to 24-year-olds living in the provincial capital cities of Colombia. A very simple instrument in the form of a six-question survey was devised to overcome the universal aversion of young people to long questionnaires. A multimedia campaign had been conducted nationwide during the previous September, inviting youth to participate, and regional and local authorities as well as public and private civic organizations accepted the invitation to become involved. The project was a complete success. Out of 420,000 forms prepared, a record 305,869 (or 72.8 per cent) were submitted in response.

Differences in both methodology and target population make it impossible to compare the results of the survey with those of the two major studies on substance abuse referred to above. Moreover, the limited amount of information to be derived from such a simplified questionnaire could raise doubts about the exercise. Such an approach, however, has the following advantages:

(a) The size of the sample and the quality of the inferences based on the observations made are far greater than what can be achieved through the alternative method of household surveys, in which the number of responses were, by comparison, 8,975 in 1992 and 18,770 in 1996;

(b) By their very nature, household surveys cannot account for drug abuse in environments other than homes. Thus, institutionalized abusers (for example, those in foster homes, rehabilitation or detention facilities) go unnoticed who probably would have made a significant impact on the results. Very much the same could be said of children and youth living on the streets (a sad and depressing reality in developing countries) who are probably much more frequent drug abusers than their counterparts in the sanctuary of the home;

(c) The target population of youth between 10 and 24 years of age consists precisely of those who, statistically, are both at higher risk of becoming abusers

(requiring preventive measures) and, at the same time, more likely to be rescued from the inferno of addiction (through treatment);

(d) Simple and straightforward questions do away with interviewers and, at the same time, eliminate or reduce the possibility of denial or conscious alteration of facts;

(e) Lastly, the economics of the approach make a big difference, especially in countries such as Colombia, where the resources available to meet social needs are so limited.

Globally, the main findings of the RUMBOS survey may be summarized as follows:

(a) Among licit psychoactive substances, alcohol has, by far, the highest prevalence in terms of lifetime use (72.9 per cent) and use in the last month before the survey (47.6 per cent). Tobacco comes second (35.9 and 20.0 per cent for lifetime and last-month use, respectively). Use of tranquillizers and inhalables is much less frequent (approximately 2 and 1 per cent, respectively);

(b) The overall results for illicit drugs are shown in the following table:

**Level of drug abuse**  
(Percentage of total responses)

Drug	Period of use	
	Lifetime	Last month
Marijuana	9.2	3.6
Cocaine	3.6	1.2
Basuco	2.1	0.9
Ecstasy	1.8	0.6
Hallucinogenic fungi	1.3	0.3
Acid	0.6	0.2
Mandrax	0.3	0.1
Amphetamines	0.7	0.2
Heroin	0.8	0.4

(c) In terms of gender, males equal females in their use of licit substances, except in the case of inhalables (where the proportion is 2:1). With illicit drugs, males exceed females in the following proportions: 2:1 (marijuana, ecstasy, acid and amphetamines); 3:1 (cocaine, fungi and heroin); and 4:1 (mandrax);

(d) The highest levels of abuse, whether of licit or illicit substances, are to be found among 20- to 24-year-olds, with adolescents aged 15 to 19 closely behind;

(e) Education does seem to have an effect on patterns of abuse. Youth at university level tend to indulge more in alcohol and tobacco. In the abuse of illicit drugs, that group comes second after youth with little or no education. Basuco and inhalables abuse is more frequent among the less educated;

(f) Youth without an activity (non-students or the unemployed) are prone to indulge in substance abuse as measured by the last-month prevalence ratio. In the long run, however, as measured by lifetime prevalence, the situation reverses.

### **Towards a study of the cost of illness associated with drug abuse**

A three-day seminar on the estimation of the economic cost of drug abuse in Colombia, sponsored by the Embassy of Canada in cooperation with the Canadian Centre on Substance Abuse (CCSA), was held at RUMBOS in Bogotá, from 27 to 29 March 2000.

During the seminar, a comprehensive review was presented on the cost-of-illness methodology as applied to economic cost estimates of drug abuse. It soon became evident that the proposed CCSA international guidelines for estimating the costs of substance abuse might provide a useful framework for a similar study to be conducted in Colombia. There are, however, important differences between developed consumer countries and developing producer/consumer countries, differences extending well beyond the mere notion of economic development and calling for a somewhat varied approach to cost estimation and the selection of alternative analytical tools.

The present section provides a preliminary inventory of differences and key issues that need to be addressed in order to formulate alternative guidelines on cost estimation for cases such as that of Colombia.

#### ***General inadequacy of statistical data***

Failure to maintain up-to-date records makes it very difficult to carry out detailed studies on specific issues. Colombia has been traditionally averse to record-keeping, a fact that has made research often nearly impossible, be it because of a total lack of information, random discontinuity in a time series, or an unexplained inconsistency among sources or between different periods. It is therefore not unusual, in Colombia, to find extreme discrepancies in estimates from what seem to be the simplest economic data. In such circumstances, studies that might have appeared easy when first undertaken often become impossible, and the task of research becomes endless and inconclusive.

#### ***Types of cost not incurred in developing producer/consumer countries***

Certain costs, however normal in developed countries and regardless of their economic or social justification, appear to be either not currently found in developing countries, or of such limited importance as to be irrelevant for all practical purposes. Those costs include the following:

- (a) Welfare costs arising from:
  - (i) Treatment of addictions (such costs, in developing producer/consumer countries, being sometimes paid by the drug abusers themselves or by their families, although, more often than not, the addiction goes untreated);
  - (ii) Unemployment benefits (food stamps or similar programmes);
- (b) Costs of prevention and research.

### *Types of cost not incurred in developed consumer countries*

Certain costs arising from drug-related activities, although part and parcel of day-to-day reality in developing producer/consumer countries, are largely unknown in developed consumer countries. Those costs include the following:

- (a) Widespread corruption brought about by huge amounts of cash that make it possible to buy everything and everyone;
- (b) Damage to the environment at every stage of the illegal activity (destruction of tropical forest to allow agriculture, and subsequent destruction of illicit crops by means of chemical agents that render the land useless for many years or for good);
- (c) Economic effects of money (laundered or otherwise) derived from the manufacture of and trafficking in narcotic drugs;
- (d) Economic effects of guerrilla warfare associated with the manufacture of and trafficking in narcotic drugs and its sequel (casualties and injuries; actual or threatened kidnappings with demands for ransom payments; private security arrangements; forced recruitment of youth/children; dislocation of communities; and property losses due to the impossibility of finding buyers);
- (e) Law enforcement costs relating to the manufacture of and trafficking in narcotic drugs, including both police and military costs (whether or not borne by other countries);
- (f) General institutional instability/destabilization.

### *Types of cost requiring alternative evaluation techniques*

Certain costs, while similar in both developed and developing countries, should probably receive different treatment when attempting to place a value on them. They include the cost of human life in the presence of: chronically high levels of unemployment; a state of civil war; and measures to promote social cleansing.

### *Final comments on attempts to estimate costs arising from consumption*

Efforts to estimate costs arising from the consumption of drugs may be hindered by certain limitations, ranging from severe to insurmountable. On the basis of a tentative list prepared for the Bogotá seminar, those limitations are briefly reviewed below.

#### *Productivity losses from morbidity*

Apart from the lack of precise record-keeping by Colombian hospitals, which makes it exceedingly difficult to accurately measure morbidity in general, there is an additional problem. Due to regulations governing the provision of health care, doctors and hospitals are frequently compelled not to record and report the real causes of a medical condition, lest the patient, with other options closed, go untreated.

*Law enforcement costs arising from drug possession and crime related to drug use*

There is no tradition of record-keeping in regard to law enforcement costs arising from drug possession and crime related to drug use, which may have made little difference, since most of the cases never reach the courts, or even the police station. Impunity has thus become the law of the land in Colombia, with general corruption as its unfortunate result.

*Health-care costs*

Because of a chronic lack of resources in the public welfare system, most health-care costs are borne by the private sector, including health maintenance organizations, insurance companies, families and individuals. There are no information systems or agencies that automatically collect the relevant data.

*Prevention and research*

The costs associated with prevention and research should be less difficult to assess, given the small sums involved. Prevention is mainly the responsibility of government agencies, always short of funds. Research, apart from the efforts of a few private institutions, is not actively promoted in Latin American countries.

*Other costs*

Other costs associated with substance abuse, although difficult to assess in economic terms, include those entailed by: children dropping out of school because of substance abuse; accidents, injuries or crimes caused by individuals while under the influence of drugs; losses in the workplace caused by accidents, absenteeism or psychological disorders brought about or worsened by drug abuse; and loss of value of real estate located in or around consumption areas.

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6. *Ibid.*, pp. 99-101.