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TECHNICAL DATA SHEETS

MONITORING THE SUPPLY OF COCAINE TO EUROPE

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Foreword

Cocaine use and cocaine-related problems in Europe have increased markedly since the mid-1990s. Surveys have shown that in many EU countries — and in Europe overall — cocaine is now the second most commonly used illicit substance among the general population, after cannabis. 3.5 million, or 2.4 % of young adults aged 15–34, are reported to have used cocaine in the past year. In addition, targeted studies have observed high levels of cocaine use in some recreational settings (clubs, parties). In a few EU Member States, the demand for treatment for cocaine use has also increased in recent years. Furthermore, a substantial proportion of opioid users in treatment report cocaine as their secondary drug, which may be contributing to their problems and complicating their care. Cocaine is also reported in the toxicological analysis of a high proportion of drug-related deaths in some countries, generally in combination with opioids and other substances.

The picture of cocaine use and trafficking in Europe is complex. Some countries (e.g. Spain, the Netherlands, United Kingdom) have a long-established cocaine problem, while several others (e.g. France, Portugal, Italy) have seen a rapid increase in cocaine use and seizures in recent years. Other countries, mainly in eastern and northern Europe (e.g. Finland, Lithuania, Latvia), still report very low figures for both cocaine use and seizures. However, the European cocaine market could become more homogeneous in the future if consumer demand grows, if increasing amounts of the drug become available, and if new trafficking routes towards and inside Europe continue to develop.

Cocaine is almost exclusively produced in the Andean-Amazonian region of South America and it is believed that during the 1980s and early 1990s the vast majority of the production remained on the American continent. With a significant proportion of the global cocaine output now destined for Europe, new cross-Atlantic trafficking routes have emerged. With cocaine use and related health and social problems increasing in Europe, the European Union and its Member States have gradually developed national and regional actions against cocaine trafficking, and have become increasingly involved in the fight against cocaine production at the international level.

This technical data sheet provides an overview of what is known about how cocaine is produced and trafficked into the European Union. It aims to provide a better understanding of the actors involved, the routes taken, and the scale of the problem in Europe. It also reviews some of the responses already developed at European level. Its findings are based on the latest data and analysis available from specialised European and international organisations, NGOs and scholars ([1]).

This publication is structured in a way to provide a condensed review of key issues relevant to understanding how cocaine reaches European markets. At various points in the document, background information on the chemistry and legal status of cocaine and crack cocaine, as well as key European figures are provided. Analysis begins with a summary of coca cultivation and cocaine production in South America. This is followed by a description of the three main smuggling itineraries followed by cocaine before it reaches Europe. The report then discusses cocaine trafficking within Europe, together with the issue of the availability of potassium permanganate, an indispensable chemical for manufacturing cocaine hydrochloride. Finally, the report provides an overview of international initiatives at the European Union level to address the problem of cocaine production and trafficking and its consequences.

([1]) Data limitations are explored in the box 'Data and sources' on p. 9.

Introduction

Data published by the United Nations Office on Drugs and Crime (UNODC) point to an overall stable annual production of pure cocaine alkaloid during the last decade, at between 800 and 1000 tonnes. However, in Europe, overall cocaine seizures have tripled during this period. Survey data have also shown an increasing trend in cocaine use in many countries in the region. New trafficking routes between the producer countries and Europe have also been identified, pointing to a growing interest of criminal organisations in the European market, which have had a detrimental impact on transit countries.

The changing situation of Europe in the international cocaine trade, and the increase in cocaine-related problems, have recently triggered numerous policy initiatives and scientific publications. For instance, during its Presidency of the EU in 2007, Portugal launched a number of activities to reinforce Europe's response to cocaine trafficking, together with other problems linked to cocaine use. In the same year, the EMCDDA launched three publications exploring treatment and other public health issues related to cocaine and crack cocaine use ([2]).

Cocaine in Europe at a glance

- Number of adults (15–64 years old) having used cocaine in their lifetime: 12 million (3.6%).
- Number of young adults (15–34 years old) having used cocaine during the last year: 3.5 million (2.5 %).
- Cocaine is reported as the primary drug in about 16 % of all treatment requests.
- Available national estimates of problem cocaine use (Spain and Italy): between 3.7 and 6 cases per 1000 adult population.
- Over 450 cocaine-induced deaths reported by 14 countries in Europe, yet more deaths are the result of its chronic toxicity and are not reported as cocaine deaths.
- 72 700 seizures were reported for 2006, resulting in the interception of 121 tonnes of cocaine.
- Countries reporting the largest number of seizures (in descending order): Spain, UK (2005), Germany, France.
- Countries reporting the largest quantities of cocaine seized (in descending order): Spain, Portugal, The Netherlands, France.
- Typical price of cocaine: from EUR 50 to EUR 75 per gram. Prices have declined since 2000 in most countries.
- Typical purity of cocaine: from 25 % to 55 % in most countries.
- Common adulterants or cutting agents include the local anaesthetics lignocaine (lidocaine) and benzocaine; painkillers such as phenacetin (a carcinogenic substance) and paracetamol; and other agents such as hydroxyzine, boric acid, glucose, manitol, lactose and caffeine.

Source: EMCDDA, 2008a and 2008b (2006 data unless otherwise indicated)

([2]) These were as follows:
Drugs in focus 17, Cocaine use in Europe: implications for service delivery
http://www.emcdda.europa.eu/html.cfm/index44778EN.html
Selected issue no. 2 2007, Cocaine and crack cocaine: a growing public health issue
http://www.emcdda.europa.eu/html.cfm/index44746EN.html
Treatment of problem cocaine use: a review of the literature
http://www.emcdda.europa.eu/html.cfm/index40152EN.html

Cocaine

Cocaine is a natural product extracted from the leaves of *Erythroxylum coca Lamark* and *Erythroxylum novogranatense* (coca leaves). These tropical shrubs are cultivated widely in the Andean-Amazonian region, and are the only known natural source of cocaine. Synthetic cocaine can also be obtained through various methods, but this is less economic than the extraction of the natural product.

There are two forms of cocaine in Europe: cocaine powder (HCl, a hydrochloride salt) and the less common crack cocaine (a free base). The drug is typically snorted (powder) or smoked (crack), while injection is less common. The crack cocaine available in Europe is typically manufactured from cocaine HCl in locations close to where it is retailed and used. For this reason, crack generates very little cross-border or long-distance trafficking.

Cocaine is listed among the substances with addictive properties and presenting a serious risk of abuse in Schedule I of the United Nations 1961 Single Convention on Narcotic Drugs. Coca leaf is also separately listed in Schedule I and is defined by Article 1, Paragraph 1, as: 'The leaf of the coca bush, except a leaf from which all ecgonine, cocaine and any other ecgonine alkaloids have been removed.' Potassium permanganate, an essential processing chemical in the manufacture of cocaine, is listed in Table I of the United Nations 1988 Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances.

Source: EMCDDA, Cocaine and crack drug profile
http://www.emcdda.europa.eu/publications/drug-profiles/cocaine

Coca and cocaine production in the Andean-Amazonian region

Historically, cocaine HCl was produced legally on an industrial scale in the late 19th and early 20th century. The main manufacturers were Dutch, German and Japanese pharmaceutical firms, which obtained coca leaves from plantations on islands belonging to the Dutch (e.g. Java) and Japanese (Formosa) colonial empires. In the 1910s and 1920s, more coca was produced in Asia than in South America (De Kort, 1999; Karch, 1999).

Today, cocaine HCl is manufactured illegally from coca cultivated in the Andean-Amazonian region of South America. Total global production of coca (and cocaine HCl) is almost fully concentrated in just three countries: Colombia, Peru, and Bolivia (in descending order of present-day estimated coca output). However, a few hundred hectares of coca shrubs are also cultivated in Ecuador, Venezuela and Brazil, and cocaine HCl may be refined outside the three main Andean coca and cocaine producers.

Coca is regarded as a sacred leaf for some of the indigenous American communities of the Andes and Amazon basin, where it has been used for a variety of purposes for thousands of years (Mortimer, 1974). As a consequence, the legal status of coca is sometimes ambiguous in South America, complicating efforts at controlling cocaine production. Bolivian and Peruvian laws allow the growing of some coca in order to supply long-standing, licit, local consumer markets for coca leaves ('chewing') and derived products, mostly coca tea, in both countries. The INCB has recently called for the suppression of these legal coca markets under Article 49, 2e, of the 1961 Single Convention on Narcotic Drugs, which requires the elimination of coca consumption 'within twenty-five years of the coming into force of this convention' (INCB, 2008a). Additionally, some coca is grown legally in Peru and Bolivia for processing into decocainised flavouring agents that are sold to international manufacturers of soft drinks under Article 27 of the 1961 Single Convention. Finally, the 'chewing' of coca leaves and the drinking of coca tea appears to be tolerated for some communities or in some regions in a number of South American countries, including Argentina, Brazil, Chile, Colombia and Ecuador.

Estimating coca cultivation

In 2006, the global acreage of coca bush cultivation was estimated, depending on the source, to be 156 900 hectares (UNODC, 2008a) or 220 000 hectares (NDIC, 2007). By comparison, the UN Food and Agriculture Organisation estimates that 581 000 hectares of maize (a staple food for Colombians) were harvested in Colombia in 2006 (FAO 2008). Most of the coca cultivation was thought to take place in Colombia but acreage estimates varied largely between sources with figures of 78 000 hectares (UN) and 157 200 hectares (US). Peru was considered the country with the second largest acreage, estimated at 51 400 hectares (UN) ([3]) or at 37 000 hectares (US).

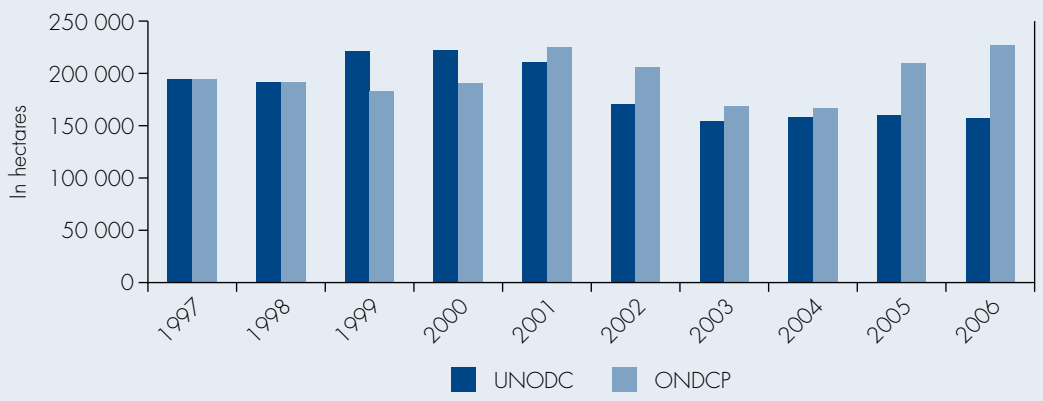
([3]) UNODC's coca acreage estimates for Bolivia and Peru include areas dedicated to licit coca crops. In Bolivia, for instance, national legislation (Ley 1008) allows the cultivation of up to 12 000 hectares of coca to supply the licit national consumer market.

Finally, estimates for Bolivia, the third largest grower of coca shrubs, were relatively close at 27 500 hectares (UN) and 25 800 hectares (US).

As regards trends, both sources report increases in acreage in Peru and Bolivia over the period 2002–2006, but diverge regarding the trend in Colombia: the UN reports a decline between 2002 and 2006 and the US reports an increase. Thus, according to the UN estimate, Colombia in 2006 accounted for about half of the total coca bush cultivation for the three countries, yet according to the US estimate this share was above 70 %.

Taking an overall and long-term view, UN data show a decline of about 25 % in the total coca cultivation surface of the three countries during the period 1990–2006. The US surveys suggest that this aggregate coca cultivation has remained stable or has increased during the last 20 years. Finally, according to calculations based on US official coca acreage estimates (1987–2006) by the Washington Office on Latin America (WOLA) ([4]), the surface under coca cultivation in 2006 in the three countries could have grown to encompass the largest area on record since 1987 (WOLA, 2007).

Figure 1. Global illicit cultivation of coca bush (available estimates)



Sources: UNODC, 2007a; WOLA, 2007 (based on ONDCP reports).

([4]) WOLA, The Washington Office on Latin America, is an NGO, see: http://www.wola.org/

Estimating cocaine production

In spite of different results in estimating the land surface dedicated to coca crops, the two existing sources converge somewhat as far as the Andean aggregate potential production of pure cocaine for 2006 is concerned ([5]). The UNODC (2008a) estimates production at 984 tonnes while the US (NDIC, 2007) suggests a slightly lower figure, at 970 tonnes ([6]). Estimates of the pure cocaine production for Colombia from both sources are identical, at 610 tonnes. However, this identical figure is arrived at by different calculation methods, since the US acreage estimate of coca cultivation in Colombia in 2006 was double that produced by the UN for the same year.

Trends in pure cocaine production in the Andean region over the period 2002–2006 appear to be overall relatively stable, with estimates fluctuating around 900 tonnes ([7]). At country level, both sources report increases of production in Colombia and Bolivia, but diverge regarding Peru, with UN figures showing an important increase and US figures reporting a decline over the period.

Taking the long-term view, UN data indicate an increase of 27 % in the total pure cocaine production of the three countries during the period 1990–2006 (UNODC, 2008a). This may reflect improvements in cultivation and production techniques since during the same period the total acreage cultivated is estimated to have shrunk by about a quarter.

The vast majority of the cocaine HCl laboratories dismantled worldwide in 2006 were located in Colombia (201 labs), with Peru (11 labs) and Bolivia (5 labs) far behind (UNODC 2008a). Colombia is also the world's largest confiscator of cocaine (HCl and base) with 167 tonnes seized in 2007 (UNODC, 2008b)

It should also be noted that unknown, but probably lower, amounts of cocaine HCl are refined elsewhere in Latin America since coca leaves, coca paste and cocaine base (the two intermediary products) may all be exported to neighbouring countries for further processing into cocaine HCl. Laboratories for processing cocaine are found in countries such as Argentina (nine labs found in 2006), Chile (two in 2006), Venezuela (18 in 2005) (UNODC, 2008c) and Ecuador (one in 2006) (INCB, 2008a). Some cocaine HCl may also be refined in Brazil, Panama, Paraguay and possibly Mexico. In addition, cocaine labs have been dismantled outside of Latin America in recent years: in 2006, 10 cocaine labs were dismantled in Spain, one in South Africa, and four in the United States; in 2005, one was dismantled in France (UNODC, 2008c); in 2004, five labs were found in

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([5]) The figures of illicit cocaine production published by the UNODC and the US government are estimated amounts of 'pure cocaine' (NDIC, 2007) or 'pure cocaine alkaloid' (UNODC, 2008a) contained in the cocaine HCl that could be potentially manufactured from the coca leaf output estimated for a given year. Thus, for instance, since the UNODC (UNODC, 2007d) estimates that 610 tonnes of 'pure cocaine alkaloid' were produced in Colombia in 2006 and that on average the Colombian cocaine HCl contains 85 % 'pure cocaine alkaloid', it may be worked out that in 2006 some 701.5 tonnes of cocaine HCl could potentially have been manufactured in Colombia (610 tonnes of 'pure cocaine alkaloid' + 15 %).

([6]) According to the UNODC (2008a), about 42 % — some 416 tonnes — of the estimated global pure cocaine alkaloid output was seized by authorities around the world in 2006. By comparison, the 2006 interception rate for opiates was much lower, at 23% of global production, or 142 tonnes of heroin equivalent.

([7]) Fluctuations during this period were between 800 and 1008 tonnes, according to the UN (UNODC, 2008a), and between 775 and 975 tonnes according to the US (NDIC, 2007).

Australia and one in Hong Kong (UNODC, 2007c) ([8]). Although some of these labs were probably HCl 're-packaging facilities' (e.g. for extracting cocaine HCl embedded in the shipments of licit products, such as textiles or fertilizer), it is possible that other laboratories actually were carrying out the last stage of the refinement process, i.e. transforming cocaine base into HCl. This would mean that both cocaine HCl and cocaine base are exported from Latin America. However, this is difficult to ascertain given current reporting practices, which, outside Latin America, rarely differentiate between seizures of cocaine base and seizures of HCl.

Data and sources

The collection of systematic and routine information, which would give a clear picture of the supply of cocaine from the Americas to European markets, is both methodologically and practically challenging. Consequently, any analysis in this area must be made with caution.

Illicit cultivation of coca leaf — and therefore production of cocaine HCl — is extremely difficult to estimate, and only two public sources of data are available on the matter: the Crop Monitoring Programme of United Nations Office on Drugs and Crime (UNODC) ([3]) ; and the annual production surveys carried out by the United States Central Intelligence Agency (CIA) and published by the Office of National Drug Control Policy (ONDCP) ([4]).

The coca cultivation estimates are based on sampling on the ground and aerial and satellite surveys. They also involve working out yields of coca fields and extraction rates of cocaine alkaloid from harvested leaves. These estimates are affected by different problems including changes in cultivation and detection techniques (ONDCP, 2007) and variations in the alkaloid content of the coca leaves. The results of the surveys must therefore be considered as approximations, and require careful interpretation. Large differences between some UN and US estimates (see section 'Estimating coca cultivation') also point to a need for caution.

Drug seizures are another data source which may be taken as an indirect indicator of the supply, trafficking routes and availability of drugs. Nonetheless, these may be influenced by variations in law enforcement resources, priorities and strategies. Data on price and purity may also be used to understand the dynamics of cocaine supply in Europe, and potentially reflect prevailing conditions in production areas and along the trafficking routes. However, issues of data availability, reliability and comparability limit the potential use of these data. Lastly, law enforcement intelligence, where available, may be used to complete the picture.

The information presented in this document is based mostly on UNODC information systems and analyses, complemented by ONDCP reports and Europol insights. As far as essential chemicals are concerned, information is based on the International Narcotics Control Board (INCB) analysis drawn from international initiatives set up to prevent the diversion of chemicals used in the manufacture of illicit drugs. Data on cocaine seizures, prices at street level and purity are collected by the EMCDDA, and provide routine information on the European situation, together with the national reports of the EMCDDA Reitox network of national focal points. Finally, information and analysis from a number of relevant qualitative studies have also been used.

([8]) Problems of reliability may affect the data concerning cocaine-product laboratories reported to UNODC by UN member-states (UNODC 2007c, 2008c).

([9]) http://www.unodc.org/unodc/en/crop-monitoring/index.html

([10]) http://www.whitehousedrugpolicy.gov/

Suppressing coca in Colombia

Colombia is the world's leading illicit producer of coca and of cocaine HCl. It is also one of the countries in the world with the longest experience of using aerial spraying of herbicides to suppress drug crops. This method as an illicit crop suppression measure has been promoted and supported by the federal government of the United States since the early 1980s. The first major aerial spraying campaign was launched in 1982 against cannabis plantations, and in the 1990s regular aerial spraying campaigns were introduced against poppies and then against coca plantations (Guáqueta, 2007). In 2000, a new aerial spraying campaign was launched by the Colombian government against coca and poppy plantations using a reportedly highly concentrated herbicidal mixture based on glyphosate. In addition to aerial spraying, a ground eradication campaign involving the manual uprooting of drug plants was initiated in 2001 (Vargas, 2005). Both campaigns were still underway in 2008.

There is ample evidence of the negative impact of drug production on the environment, notably deforestation and the disposal of chemicals used to refine drugs in rivers and streams of often fragile ecosystems (UNODC, 2006). Additionally, large-scale aerial spraying of chemicals has also been blamed for adversely affecting the environment and human health (Jelsma, 2001) but there is currently little evidence available as yet to assess such claims.

The surface area subjected to eradication measures in Colombia has rapidly increased since 2000, and in 2006 the area subjected to eradication was almost three times larger (215 000 hectares) than the UN-estimated acreage of cultivated coca in that same year (78 000 hectares) (UNODC, 2008a). However, it must be noted that, for a variety of reasons — such as replanting after spraying — only a portion of the illicit crops sprayed are effectively suppressed (Vargas, 2005).

In spite of the considerable investment in suppression efforts — probably the world's most substantial in this regard — and irrespective of the uncertainty of acreage estimates, there is little doubt that coca continues to be cultivated on a large scale in Colombia. This supports the contention that eradication measures alone are unlikely to be effective if they are not accompanied by other measures to address the broader causes of the problem. While the issue of agricultural drug production and drug trafficking in Colombia is highly complex and underpinned by a wide range of interacting factors (Thoumi, 1995), two issues stand out that are likely to be of particular relevance: the land issue; and the armed conflict.

From coca to cocaine

Manufacturing cocaine hydrochloride from coca leaves is a multifaceted chemical process, which in the Andean-Amazonian region is typically performed in three stages. During the first stage coca leaves are transformed into coca paste. The leaves are moistened with lime water or other alkali and extracted with kerosene (paraffin, domestic fuel). The dissolved cocaine is extracted from the kerosene with sulphuric acid to produce an aqueous solution of cocaine sulphate. This solution is neutralised with lime, causing cocaine base to precipitate (coca paste). This stage requires little skills or financial investment apart from buying the necessary, widely available, chemicals. Often, this process is carried out by the coca growers themselves, who then sell the coca paste to middlemen. However, some farmers simply sell coca leaves.

The second stage involves transforming coca paste into cocaine base. Coca paste is redissolved in sulphuric acid and potassium permanganate is added to destroy cinnamoylcocaine and other impurities. The filtered solution is again treated with alkali to precipitate the free base, which is dissolved in acetone or other solvents. This requires additional skills and investment, but many coca growers also perform this stage.

Finally, cocaine base is refined into cocaine hydrochloride by adding concentrated hydrochloric acid to the solution, causing cocaine hydrochloride to settle out as a solid residue. This is a more complex procedure that requires more skills, more chemicals and more financial investment. This is therefore performed in jungle 'laboratories' run by organised crime groups which buy coca paste or cocaine base from the middlemen (Thoumi, 1995; UNODC, 2007d; EMCDDA drug profiles).

The main chemicals used in the process described above are subject to international control measures. Sulphuric and hydrochloric acids, acetone and certain other solvents are listed in Table II, whereas potassium permanganate is listed in Table I, of the United Nations 1988 Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances.

The UNODC, based on its own field surveys and on information from the US Drug Enforcement Administration (DEA), reports the following average ratios for Colombia (UNODC, 2007d):

- 1 hectare of coca shrubs yields 1.36 tonnes of coca leaves per harvest;
- 1 tonne of coca leaves yields 1.63 kg of coca paste or 1.52 kg of cocaine base;
- 1 kg of cocaine base yields 0.9 kg of cocaine hydrochloride;
- 1 kg of cocaine hydrochloride contains approximately 85 % pure cocaine alkaloid;
- 1 hectare of coca shrubs yields 7.4 kg pure cocaine alkaloid.

In Colombia in 2006, average prices for coca products were as follows (UNODC, 2007b):

- 1 kg of coca leaves: USD 1;
- 1 kg of coca paste: USD 879;
- 1 kg of cocaine base: USD 1 038;
- 1 kg of cocaine hydrochloride: USD 1 762.

Drug production and the land issue in Colombia

In Colombia, most of the coca leaves, coca paste and cocaine base is produced by small farmers who rely extensively on family labour. An estimated 65 000 to 100 000 families are involved in this illicit agricultural activity (UNODC, 2007d; Calvani, 2005). Most of these families are poor and they live in remote agricultural 'frontier' areas located in the Amazon and Orinoco basins, respectively south and east of the country. In many of these regions, state institutions and services are absent, and irregular armed groups (guerrillas and paramilitaries) control the territory. Large numbers of farmers have migrated to the 'frontier' because of lack of access to land, or to escape the violence in their regions of origin. Many of them grow coca for a living because the frontier areas lack the infrastructure — especially transportation — needed for other, licit, crops to be profitable, or because they do not have access to the resources needed to launch sustainable licit agricultural activities. However, especially in the late 1970s, some of them were also attracted to the frontier by the relatively large profits to be made from producing coca paste (Molano, 1987; Mondragón, 1999; Thoumi, 1995).

The concentration of land ownership in Colombia has been cited as a likely cause of the existence of so many 'cocaleros', or coca growers, and their presence in the 'stateless' frontier. In the early 2000s, 0.4 % of registered landowners owned 61.2 % of the country's arable land, while 97 % owned only 24 % of arable lands (IGAC/CORPOICA, 2002). This situation results to a considerable extent from the large-scale land purchases made by drug traffickers eager to gain recognition as 'respectable' landowners since the late 1980s. By the mid-1990s 'narcos' were the registered owners of an estimated total of 4.4 million hectares of land in Colombia (Reyes 1997), which is equivalent to approximately twice the amount of arable land in Colombia, or about 4 % of the country's total land area ([11]). This concentration process, which is often referred to as 'counter-land reform', has further fuelled the migration of landless farmers to the coca growing frontiers. As the former UNODC representative in Colombia put it: 'land concentration is one of the main causes of rural poverty, internal displacements ([12]), armed groups, land misuse and illicit crops' (Calvani, 2005). In part because many land purchases have been made for non-agricultural purposes since the 1990s, land is also under-utilised, and just 3.6 % of rural properties are dedicated to agriculture. Thus, land concentration and under-utilisation make alternative development initiatives both more difficult to implement and less productive.

([11]) According to the FAO (2008), in 1995 there were 2.4 million hectares of arable land in Colombia, while the country's total land area was approximately 1.1 million square kilometres, or 110 million hectares.

([12]) With around three million internally displaced persons, 'Colombia has one of the largest IDP populations in the world' (UNHCR, 2008).

Drug production and armed groups in Colombia

Colombia is affected by a 50-year old civil war, with armed groups present in many regions where coca is grown and cocaine products are manufactured. The similarity with Afghanistan, the world's leading illicit producer of opium and possibly of heroin, where internal armed conflicts have been recurrent over the last thirty years, is striking. Historically at world level, many of the countries that at one point in time have become major producers of drug plants had internal conflicts or were at war ([13]). This strongly suggests the existence of synergies between armed conflicts, especially civil wars, and illicit agricultural drug production (McCoy, 1972; Lamour, Lamberti, 1972; Labrousse, 1991; Vargas, 2005; Calvani, 2005; GTZ, 2007; Chouvy and Laniel, 2007).

Such synergies are in evidence in Colombia, where many sectors of the drug economy have been connected with, or indeed controlled by, irregular armed groups since the mid-1980s (Medina Gallego, 1990; Betancourt and García, 1994; Duncan, 2006). Colombia's internal conflict pits left-wing guerrilla movements, the large FARC and the smaller ELN, which intend to overthrow the Colombian government, against several right-wing paramilitary units that federated under the banner of the AUC in 1997 ([14]) and whose main objective is the suppression of guerrilla movements in the country. Many of the groups that joined the AUC have roots in the private armies set up by drug cartel bosses in the late 1980s (Medina Gallego, 1990; Betancourt, García, 1994; Duncan, 2006). The Colombian military is also actively fighting against the guerrillas, especially the FARC, which it accuses of being a major international drug trafficking organisation.

Taken together, the FARC and the paramilitaries have territorial control of many drug producing areas (UNODC, 2007d). These rural regions, their population, and the resources that may be extracted from them, form the base of the irregular armies' economic and political power as well as the scenes of much of their fighting ([15]). Typically, in the areas under their rule, Colombia's two main irregular armed groups monopolise the purchase and sale of coca paste or cocaine base, and set the prices at which these commodities are bought from producers and sold to cocaine refiners (Jansson, 2005). In addition, they actively promote the illicit cultivation of drug plants, and the 'taxing and protecting' of cocaine laboratories and clandestine landing strips for aircraft (Calvani, 2005). Some of the fighting between the guerrillas and the paramilitaries is rooted in the struggle to gain control of drug-producing regions (Labrousse, 2004). Although the armed groups are involved in lucrative illicit activities other than drugs, including arms trafficking, extortion, robbery, misappropriation of public funds, and kidnapping for ransom (Duncan, 2006), there is little doubt that the drug trade provides a significant — but hard to estimate — proportion of both groups' funds (Labrousse, 2004; Duncan, 2006).

([13]) In addition to present-day Afghanistan and Colombia, the historical list includes: China, Guatemala, Mexico, Myanmar, Laos, Peru, and Thailand.

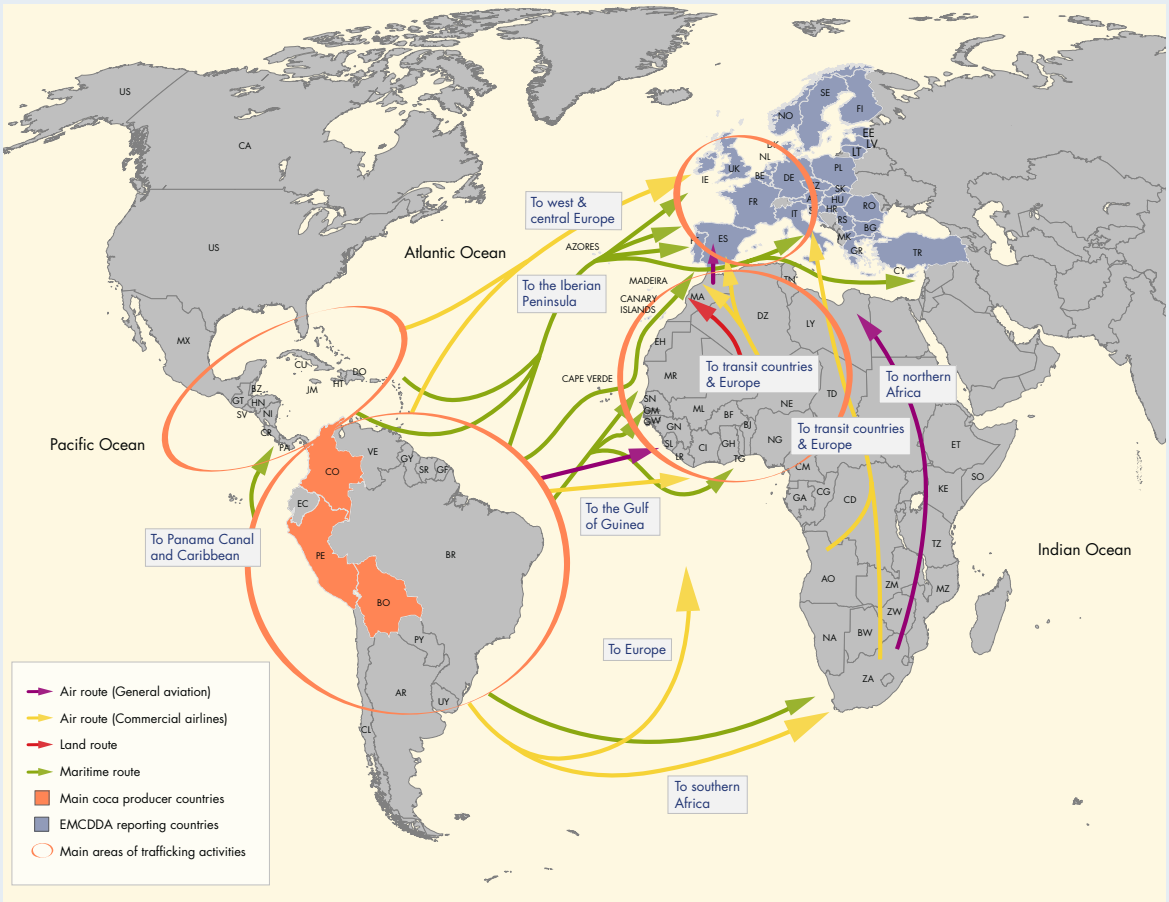
([14]) FARC-EP stands for 'Fuerzas Armadas Revolucionarias de Colombia-Ejército del Pueblo' *(Revolutionary Armed Forces of Colombia-People's Army)*; ELN stands for 'Ejército de Liberación Nacional' *(National Liberation Army)*; AUC stands for 'Autodefensas Unidas de Colombia' *(United Self-Defence Forces of Colombia)*.

([15]) However, the irregular armies' illicit activities and violence are also played out in urban centres (Duncan, 2006).

Main trafficking routes to Europe

The UN estimates that, in 2006, the European share of global cocaine seizures (in volume) continued to grow steadily, from 8 % in 2000, to 14 % in 2005 and 17 % in 2006 (UNODC, 2008a). This variable is certainly influenced by factors, such as national law enforcement policies. It may also indicate that trafficking to Europe has increased, and the fact that cocaine use in Europe has risen while European price trends continue to decline may also support this claim.

Figure 2. Main cocaine trafficking flows from Central and South America and Africa to Europe



Notes: Trafficking flows represented on the map are an attempt to synthesise the analysis of a variety of international and national organisations (Reitox national focal points, Europol, INCB, UNODC, WCO). Such analyses are based on information related to drug seizures along the trafficking routes, but also on other intelligence information from other sources, such as law enforcement agencies in transit and destination countries, and anecdotal reports. The main trafficking routes represented on the map should be considered as indicative rather than accurate descriptions of the main flows, based on the knowledge that there may often be deviations to other countries along the routes, and that there are a multitude of secondary sub-regional routes which are not represented on the map. Such 'stopovers' may change very rapidly depending on constraints (e.g. law enforcement control points) and facilitating factors (e.g. commercial routes, corruption).

Europol (2007a) notes that important amounts of cocaine are transported from South America to Europe, and has identified a group of South American countries from where multi-ton shipments destined to Europe occur. These countries are: Colombia, Brazil, Ecuador, Chile, Argentina and Suriname. Furthermore, three main trafficking routes, mainly by sea, have been broadly identified: the Northern, the Central and the African routes (Figure 2). The African route has become a growing concern in recent years due to a fast increase in seizures made in west Africa.

The Northern route departs from South America and reaches Europe via the Caribbean. The INCB (2008b) estimates that 40 % of the cocaine entering Europe passes through the Caribbean, where parts of the cocaine destined for the North American market is also transiting. In a first stage, the drug can be flown or shipped directly to Caribbean islands but also transported overland, for instance through countries like Venezuela (UNODC, 2008a). From the Caribbean, transshipments and onward transportation to Europe are organised. Maritime transportation is frequently used, especially rapid and difficult to detect 'go-fast' boats, but also pleasure boats, cargo freighters and container ships. Aircraft are also used for dropping cocaine bundles in international waters to awaiting pick-up vessels. Air couriers (sometimes colloquially referred to as 'mules') are another transportation technique, with cocaine being smuggled through European airports on commercial flights.

The large volumes trafficked through the Caribbean can be explained by the region's geographical position, its historic links with Europe and, to a considerable extent, by the fact that languages are shared with destination countries. For example, the Netherlands Antilles are the origin of supplies to the Netherlands; Jamaica is used as a platform to the United Kingdom, while Martinique and Guadeloupe play an important role in the transshipment of cocaine to France. The Azores are also exploited to transship cocaine from the Caribbean to the Iberian peninsula.

The Central route runs from South America to the Iberian peninsula with possible transits in Cape Verde, the Azores, Madeira or the Canary Islands. Trafficking is frequently carried out by sea, with first larger cargo ships loading the cocaine in South America before weighing anchor and, in particular, rented ships receiving shipments on the open sea. The drug is then transshipped to places such as Cape Verde or the Canary Islands and carried to the Iberian peninsula in smaller vessels and speedboats (Zaitch, 2002). Air couriers have also been used on the Central route, notably using Madrid's Barajas airport.

Lastly, the African route has been a cause of growing concern in recent years (Europol, 2007a; UNODC, 2007a; US State Department, 2008) as the role of west Africa as a transit, storage and repackaging region in the cocaine traffic, from the Andean-Amazonian region to Europe, has reportedly increased. Based on its database of individual drug seizures, the UNODC estimates that 22 % of cocaine seizures made in Europe (where the origin had been identified) had been smuggled via Africa in 2007, up from 12 % in 2006 and 5 % in 2005 (UNODC, 2008a). In addition, some potassium permanganate seizures carried out in Africa could indicate that the continent is used as a transshipment point to import the chemical into South America.

There are several possible explanations for the development of the African route. First, it represents an alternative to more traditional routes to Europe that are better controlled by international authorities. Second, it has a privileged geographical position, being relatively close to both Europe

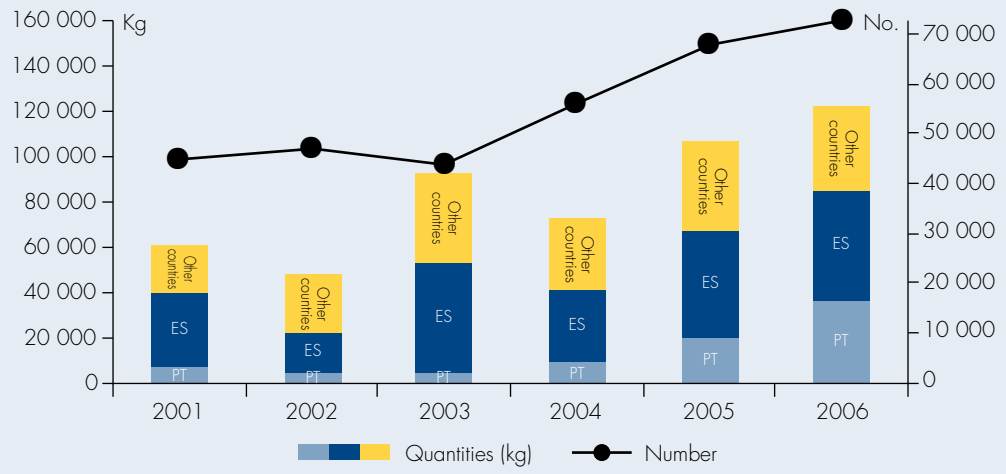
and South America. Third, the countries' economic vulnerabilities (being amongst the world's poorest) lead to a large availability of low cost labour willing to accept high risks (of incarceration, violence, swallowing larger volumes of drugs, etc). Finally, drug traffickers also take advantage of the relative weakness of the judicial and law enforcement systems of west African countries.

Cocaine shipments reach west Africa either by sea in large cargo ships or in fishing boats, or by air in specially modified small aircraft. From there, fishing boats are used to unload large quantities of cocaine mainly on the north-western coast of the Iberian peninsula. Trafficking by air or overland through north Africa, sometimes within polydrug consignments (with cannabis resin in this case), is also reported (Europol, 2007a). The number of couriers apprehended and the volume of cocaine seized in Africa has also increased significantly. Couriers from Africa are sent on commercial flights, as body-packers or swallowers, frequently applying the 'shotgun approach', i.e. where several couriers are placed on each flight, relying on the limited capacity of law enforcement to check a large number of passengers. Europol also notes some overlap between human trafficking and drug trafficking networks in Africa, both north and south of the Sahara.

Importation to Europe and distribution

Cocaine importation and distribution in Europe ([16]) is mainly concentrated in western European countries. The Iberian peninsula is considered as the main entry point for cocaine into Europe. In 2006, about 50 tonnes of cocaine were seized by the Spanish authorities, much of it at sea, representing 41 % of the total quantity intercepted in Europe. In addition, the amounts seized in Portugal have increased strongly since 2005, accounting for 28 % of the European total in 2006 at 34 tonnes ([17]). This development in Portugal may point to an increasing use of the Iberian peninsula by cocaine traffickers as a gateway to the European market, and may be linked in particular to the increasing transit of cocaine via west Africa, including some of the Portuguese-speaking countries (Cape Verde, Guinea-Bissau) (UNODC, 2007a). It may also point to a diversification in the unloading points throughout the Iberian peninsula, in response to the likely intensification in the controls of the traditional cocaine maritime route to the Spanish north-western coast in Galicia.

Figure 3. Number of cocaine seizures and quantities seized (kg) in the EU, Croatia, Turkey and Norway, respective shares of Spain (ES) and Portugal (PT) 2001 to 2006



Note: the total amount of cocaine seized is based on data from all EMCDDA reporting countries (27 EU Member States, Croatia, Turkey and Noway), whereas five EU Member States (Cyprus, Italy, the Netherlands, Poland and Romania) were not included in the total number of cocaine seizures due to unavailability of data. For countries included in the totals per year, missing data have been extrapolated from adjacent years.

([16]) In its 2008 *World Drug Report*, the UNODC suggests, quoting different law enforcement agencies including Europol, a figure of 250 tonnes cocaine entering Europe every year with a rising trend (UNODC, 2008a). However, the report does not specify how this figure was calculated.

([17]) Europol indicates that cocaine seizures decreased in Europe as a whole in 2007. The drop in cocaine seizures was especially dramatic in Portugal (7.3 tonnes in 2007), but also notable in other countries such as Spain.

Cocaine also enters Europe via other countries, in particular Belgium, France, Italy, the Netherlands and the United Kingdom, each of which seizes several tonnes of cocaine every year. It may be imported via the maritime route, hidden in cargo freight. It is also imported by air couriers — hidden on or inside their bodies, or in their luggage — or in air freight, using commercial flights from countries along the main trafficking routes in South America, the Caribbean or west Africa. Other countries outside customary routes are also playing a role, as flights from the main trafficking routes are increasingly subjected to enhanced controls. One example is the '100%-control policy' implemented since 2002 at Schiphol airport (Amsterdam) in the Netherlands — that is, the control of all passengers on direct flights from risk countries for cocaine importation in South America and the Caribbean (Netherlands Antilles, Aruba, Peru, Suriname, Venezuela, Ecuador and the Dominican Republic). This initiative, together with preventive measures (controls, radar, body scans) in departing countries, seems to have achieved some results, as both the quantities of cocaine seized and the couriers arrested have been decreasing in recent years. Displacement of trafficking to other airports in neighbouring European countries needs, however, to be investigated.

As regards cocaine importation and distribution, Europol (2007b) has identified two main criminal hubs ([18]) in Europe: the 'South-west hub' with criminal groups located in the Iberian peninsula which then use France as an important transit country; and the 'North-west hub', with criminal groups located in and around Netherlands and Belgium. The latter exploit the 'major transport infrastructures, generating huge volumes of commercial traffic with connections to worldwide markets', that are present in the region. This was corroborated by an ethnographic study of Colombian 'cocaine entrepreneurs' based in the Netherlands, which concluded that cocaine importers view the region's transport infrastructure as a key asset for their activities (Zaitch, 2005). According to Europol, the 'North-west hub' acts as a redistribution centre to other European countries, mainly in western Europe (Austria, Denmark, Finland, Germany, Sweden, United Kingdom), for both the cocaine entering via the Iberian peninsula and that being unloaded in major seaports in the region itself. A number of increasingly heterogeneous criminal groups from several countries congregate around these hubs and work together (Europol, 2007a).

Although cocaine is mainly imported to, trafficked, and used in western European countries, and though quantities seized in central and eastern Europe remain marginal (accounting for less than 1 % of European seizures in 2006), importation via some eastern European countries (including Bulgaria, Estonia, Latvia, Lithuania, Romania, Montenegro and Russia) ([19]) — both by air and sea — has been reported in recent years. Europol also notes the increasing role of Albania as a storage country for cocaine, alongside its similar role in the Balkan route for heroin trafficking (Europol, 2007a). Europol has furthermore observed an increase in the involvement of nationals of Balkan countries in cocaine trafficking. Such reports may point to the emergence of new trafficking routes in the region to avoid the enhanced controls on the traditional routes via western Europe, and/or the development of new consumer markets in central and eastern Europe. There are indeed some concerns about the 'incorporation of cocaine into the range of products offered by traditional heroin trafficking groups operating along the Balkan route' (UNODC, 2007a).

([18]) Europol defines a criminal hub as 'an entity that is generated by a combination of factors such as proximity to major destination markets, geographic location, infrastructures, criminal group types and migration processes concerning key criminals or OC groups in general. A criminal hub receives flows from a number of sources and spreads their effects in the EU so forging criminal markets and creating opportunities for the growth of criminal groups that are able to profit from these dynamics. These hubs can be seen as 'routers' attracting and re-directing external flows, such as cocaine from South America, coming to the EU directly or through west Africa' (Europol, 2007b).

([19]) Sources are the Reitox national reports 2007, except for Montenegro mentioned in UNODC, 2007a.

Potassium permanganate

Potassium permanganate is a chemical that is used extensively, and increasingly, by industry throughout the world (for instance in drinking water treatment): 24 countries reported exporting a total of 28 888 tonnes of potassium permanganate for licit purposes between November 2006 and October 2007 (INCB 2008a). But it is also an essential chemical in the illicit manufacture of cocaine. As such, it is listed in Table I of the United Nations 1988 Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances ([20]). The trade in potassium permanganate is monitored by the International Narcotics Control Board (INCB) under 'Project Cohesion', an international initiative to prevent the diversion of chemicals essential to the manufacture of illicit drugs.

Because most of the cocaine available in the world is manufactured in South America, this region is subject to special scrutiny by the INCB. South America (mainly Argentina, Brazil and Chile) was the destination of about 10% of the licit shipments monitored by the INCB between 1998 and 2006. The majority of these shipments originated from outside South America, and intraregional licit trade in the chemical was limited. Some of the potassium permanganate imported legally into South America is most probably diverted to manufacture cocaine. However, the extent of diversion is difficult to ascertain since national authorities rarely investigate and report the source of the illicit shipments of potassium permanganate they seize (INCB, 2008a).

In 2006, worldwide seizures of illicit potassium permanganate shipments reached a total of 101 tonnes, 82 tonnes less than the previous year. Colombia accounted for 98 % of these seizures (99 tonnes) and Peru for 1 % (1,3 tonnes). An important seizure of 0.3 tonnes was also made in Ecuador where a large cocaine laboratory was closed down in 2006. Another source for the potassium permanganate used in cocaine laboratories is the illicit manufacture of the chemical in Colombia. Fifteen facilities were closed down by the Colombian authorities in 2006. The INCB also reports thefts of legitimate shipments of potassium permanganate in South America as probable sources for cocaine manufacturers (INCB, 2008a). In 2007, attempted shipments of potassium permanganate to Côte d'Ivoire, Nigeria and Morocco were suspended, while the Democratic Republic of Congo reported the attempted diversion of 500 kilograms (INCB, 2008a). The INCB warns that Africa may be used as a transit territory by South American illicit potassium permanganate importers, especially in view of the recent increase of cocaine seizures in that region (INCB, 2008a). However, another possibility is that traffickers intend to use Africa to carry out the final stages of the cocaine manufacturing process.

([20]) The corresponding EU legislation is set out in Council Regulation 3677/90 (as later amended), which governs trade between the EU and third countries.

International supply reduction initiatives at the EU level

The European Union (EU) and the international community have undertaken a range of initiatives to address cocaine trafficking and the changing dynamics of the cocaine market. Some of these initiatives have been developed at the political and diplomatic level, while others are focused on operations 'in the field'.

At the political level, the EU has implemented a set of initiatives directly aimed at tackling cocaine trafficking from Latin America and the Caribbean into Europe. The EU drug strategy (2005–2012) ([21]) and EU drugs action plan 2005–2008 set specific objectives for the Latin America and the Caribbean (LAC) region. Besides the ongoing implementation of joint and assistance projects, the continued development of active political engagement by the EU with Latin America is also foreseen.

In December 2007, the Council of the EU adopted a set of conclusions welcoming continued cooperation with Latin America and the Caribbean in tackling trafficking along the cocaine routes to the EU (Council of the European Union, 2007). In this respect, the Council expressed support among others for alternative development, demand reduction efforts, and the sharing of best practices in the EU-LAC Intelligence Sharing Working Group. Recognising that cocaine trafficking to Europe through west Africa represents a serious threat to the region's stability, the Council also stressed its commitment to supporting and working closely with relevant national and regional authorities.

The EU-Latin America and Caribbean (LAC) Coordination and Cooperation Mechanism on Drugs was launched in 1995. The mechanism is the key forum for inter-regional cooperation on combating cocaine-related problems. It operates in the form of an annual plenary meeting and several technical meetings throughout the year. A high-level meeting took place in Vienna in March 2008, with the participation of the EMCDDA, the Inter-American Drug Abuse Control Commission (CICAD) and the UNODC (Council of the European Union, 2008). It resulted in the 'Hofburg Declaration' ([22]) which reaffirms the political will to strengthen the bi-regional EU-LAC cooperation against drugs. Concerns were once again expressed at the meeting about the emergence of alternative cocaine trafficking routes to Europe.

In recognition of the responsibility of the EU and the Andean Community (CAN) to work together to tackle the challenges posed by illicit drugs, a unique EU-CAN High Level Specialised Dialogue on Drugs — the only such dialogue at sub-regional level — has been underway since 1995, with annual meetings at senior official level. The EU has also signed agreements with each of the four CAN member states (Bolivia, Colombia, Ecuador, Peru) on precursors and chemical substances frequently used in the illicit manufacture of narcotic drugs (known as 'precursor agreements'). High

([21]) http://www.emcdda.europa.eu/index.cfm?nNodeID=6790
([22]) http://register.consilium.europa.eu/pdf/en/08/st07/st07602.en08.pdf

level experts from the EU and CAN meet regularly to coordinate and exchange information on implementing these agreements.

The European Union (European Commission and EU Member States) is a major donor for operational projects to prevent drug production and trafficking in Latin America. At the end of December 2005, European funding to anti-drug projects in the region totalled about EUR 235 million. The focus for EU international efforts is support for alternative development initiatives with a total of 37 projects, amounting to more than EUR 140 million, financed by the Commission and EU Member States in the region. At the end of December 2005, the EU was funding numerous projects relating to alternative development: 12 in Bolivia, 14 in Colombia, 10 in Peru and 1 in Paraguay. For instance, in Bolivia, at the end of December 2005 the European Commission was financing three programmes covering different regions, which aimed to stimulate the improvement of agricultural production and social infrastructures, as well as the facilitation and promotion of small farmers' ownership of land. In Peru, the Alternative Development Programmes (PRODAPP) ([23]) in the Pozuzo and Palcazo areas were launched in 2002 with a duration of seven years. The objectives are to support the Peruvian Government in its poverty reduction programmes and to prevent the return to illegal coca production. In Colombia, two 'Peace Laboratories' to promote alternative development and peaceful conflict resolution have been financed, with total funding of EUR 67.8 million.

In April 2007, the European Commission signed the regional strategy for cooperation with the Andean Community, allocating EUR 50 million for the period 2007–2013. One of the three priority areas for cooperation is to support the Andean countries in the CAN in the fight against illicit drugs. A first intervention in this field was approved within the 2008 Annual Action Programme, namely PRADI-CAN (Progama Antidrogas ilícitas en la CAN). One of its main objectives is to establish a network between national observatories on drug trafficking. PRADI-CAN will also reinforce and develop further the control of essential chemical precursors in the CAN countries. The EU is contributing EUR 3.25 million out of the programme's total budget of just over EUR 4 million.

With respect to cocaine trafficking routes through west Africa, many initiatives are underway at the European level. The European Commission is funding a number of bilateral projects in west Africa under its European Development Fund which aim to combat organised crime, including drug trafficking. At the regional level, the Commission initiated a three year project in 2006 on 'Law Enforcement and Intelligence Cooperation Against Cocaine Trafficking from Latin America to west Africa', and a major capacity building project in west Africa is planned to complement this project in 2009–2010.

Among the initiatives taken by the European Union, the Council, through the horizontal working party on drugs, has placed west Africa high on its agenda and has presented a resolution on strengthening international support to west Africa to the 2008 UN Commission on Narcotic Drugs. An important step forward in the operational effort to curb cocaine trafficking through west Africa was taken when in September 2007, when seven EU Member States ([24]) signed a formal Treaty to set up the Maritime Analysis and Operations Centre–Narcotics (MAOC-N) in Lisbon, Portugal.

([23]) Total cost: EUR 32 million, of which the EU contribution amounts to EUR 22.6 million. See http://www.prodapp.org/

([24]) The cofounders of this project are France, Ireland, Italy, the Netherlands, Portugal, Spain and the United Kingdom, but it is open to other Member States. Since 1 January 2008 the EC gained the status of observer, as well as the US Joint Inter Agency Task Force –South (JIATF-S, based in Key West, Florida), and Canada.

MAOC-N is a regional initiative designed to coordinate the interdiction of illicit drugs being moved by air and maritime conveyances in the Atlantic region in order to prevent drugs from reaching European markets, to deny traffickers the revenue from the delivery of the drugs, and in general to provide long-term deterrence of illicit drug smuggling. During its first year of existence MAOC-N coordinated, on behalf of its partners, the seizure of almost 30 tonnes of cocaine. Other similar initiatives are being currently considered by European countries, notably in the Mediterranean. For example, France recently launched (September 2008) another anti-drug coordination centre focused specifically on maritime drug trafficking in the Mediterranean — aiming mainly to combat both cannabis resin (hashish) and cocaine trafficking. The Centre de Coordination pour la Lutte Anti Drogue en Méditerranée (CeCLAD-M) will be based in the French port of Toulon. CeCLAD-M is open to participation from the CIMO countries ([25]), together with those Member States with coastlines on the Mediterranean. This military-supported law enforcement centre — combining sea and air operations — will focus on the western Mediterranean, with operations beginning before the end of 2008.

([25]) CIMO is the '5+5' Intergovernmental Conference of the Ministers of the Interior of western Mediterranean countries, comprising France, Spain, Italy, Portugal, Malta, together with Algeria, Tunisia, Morocco, Libya and Mauritania.

Conclusions

There is little doubt that Europe has become an important destination for cocaine manufactured in South America. In 2006, an estimated 72 700 seizures in EU Member States, Norway, Croatia and Turkey resulted in the interception of about 121 tonnes of cocaine. So Europe is today the world's third largest confiscator of the drug, after South and North America. Law enforcement data also suggest that cocaine trafficking networks are spreading eastwards, and that landing points may have shifted within the main gateway regions, the Iberian peninsula and the Low Countries (Belgium and the Netherlands).

Cocaine is smuggled into Europe via different routes using a wide variety of concealment methods and means of transport, from cargo ships and private yachts or fishing boats, to commercial airliners and small planes. The growing importance of the African route, where major cocaine seizures have been carried out in recent years, illustrates the diversification of drug trafficking itineraries. And several initiatives have been launched in Europe to address cocaine trafficking, such as the EU-LAC cooperation or the setting up of the MAOC-N.

Most of the cocaine available in the world is produced in Colombia in coca plantations, where coca makes a significant contribution to the local economy. Different measures to prevent coca cultivation and to offer alternative lifestyles to coca growers have been developed and supported, notably by the EU and its Member States. However, both the concentration of land ownership and the ongoing civil war make it difficult to implement effective and long-term action. It is important to enhance efforts to intercept cocaine products at source and on trafficking routes and consumer markets. Yet there is also a strong argument for launching complementary initiatives, to restore civil peace and promote the deconcentration of land ownership in Colombia, while fostering land use for productive, licit agricultural purposes, as they enhance the impact of other measures.

Nevertheless, understanding cocaine production in South America — and trafficking towards and within Europe — is still limited. Additional or better-developed information systems are needed for the future. In particular, the level of precision of cocaine production estimates could be further explored, since differences between various estimates need to be better understood. In addition, there is a lack of information on how much cocaine European markets may be consuming, and on how this aggregated consumption may compare with the estimated cocaine output of South America. Developing a sound methodology to assess the size of the European consumer market for cocaine would be a significant first step towards such an analysis.

Obtaining a better understanding of the cocaine trade in Europe calls for more insight on issues such as the merging of cocaine routes, multi-drug consignments, organised crime groups and trafficking networks. It also highlights the need to carry out additional studies of the intra-European cocaine markets, focusing especially on their structure, organisation, actors and dynamics.

For a variety of reasons, it is difficult to draw a clear picture of cocaine supply and trafficking in Europe, based on traditional quantitative indicators such as seizures, prices and purity data. Indeed, these need to be developed further so that comparability and reliability issues can be

addressed and more detailed data may be analysed ([26]). For example, it would be useful to distinguish between cocaine HCl and cocaine base in routine data on seizures, thereby enhancing our analytical capabilities regarding the global supply of illicit coca-derived products. Furthermore, there is also a need to develop innovative alternative monitoring strategies which may be based on sources other than law enforcement, and which may rely on more qualitative data.

Better and more systematic information on illicit sources and trafficking routes of potassium permanganate, and other chemicals used to manufacture cocaine, would contribute to a clearer picture of potential processing sites in South America and elsewhere, especially in Europe. Information on precursors would also help in designing adequate responses to countering cocaine production. As we face a need to target supply reduction efforts effectively, both inside and outside Europe, it is vital to improve our understanding of the dynamics of the illicit trade in coca-derived products and essential chemicals..

([26]) See the Council of the European Union document 12411/1/01 STUP 26 on a draft Council recommendation on the alignment of law enforcement drug and diverted precursor statistics.

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Rua da Cruz de Santa Apolónia, 23–25, 1149-045 Lisbon, Portugal
Tel. (351) 218 11 30 00 • Fax (351) 218 13 17 11
info@emcdda.europa.eu • http://www.emcdda.europa.eu

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