

37. After a year of reflection, during which Task Force members analysed in more depth the results of Operation DICE-2, which concluded in mid-April 2010, the Project Cohesion Task Force agreed at its 2011 meeting in Canberra that there was a need to improve reporting on heroin precursors in Afghanistan. The Board would continue to address that through established channels. At the same time, efforts would be undertaken to seek the cooperation of countries with a presence in Afghanistan to share relevant information with the Board. Additional efforts should also be taken to improve understanding of the sources of acetic anhydride seized in connection with the illicit manufacture of P-2-P and, subsequently, methamphetamine.

38. Regarding chemicals used in the illicit manufacture of cocaine, progress in the implementation of the plan of action agreed on during the 2010 Task Force meeting in Bogotá has been very slow. In July 2011, the Government of Colombia concluded a baseline study to identify trends in the legitimate use of potassium permanganate and to determine the country's needs in that regard. However, since that study and other available information suggested that a majority of potassium permanganate and other required chemicals were diverted from, or illicitly manufactured within the Latin American region, the 2011 Task Force meeting was of the view that, unless there was evidence to the contrary, the problem might be more effectively addressed within the region than through an international operation.

III. Extent of licit trade and latest trends in trafficking in precursors

39. The present chapter provides an overview of the licit trade in precursors and major trends and developments in their illicit trade. It summarizes information on seizures and cases of diversion or attempted diversion from international trade, as well as activities associated with illicit drug manufacture. Significant variation in annual data occur as a result of inconsistent reporting by Governments and the fact that seizures of precursors generally reflect the results of individual significant seizures and targeted regulatory and law enforcement initiatives. Similarly, as seizures of precursors are often the result of cooperation among several countries, the occurrence and magnitude of seizures made in a given country should not be misinterpreted or overestimated with regard to that country's role in the overall trafficking in precursors situation, but rather should be considered in a broader context, reflecting time periods longer than the

actual reporting year. Consequently, the data and conclusions presented herein reflect information that covers multiple years.

A. Substances used in the illicit manufacture of amphetamine-type stimulants

40. Significant international trade occurs in many of the precursors used in the manufacture of amphetamine-type stimulants. During the reporting period, the authorities of 44 exporting countries used the PEN Online system to report 5,000 transactions involving shipments of precursors of amphetamine-type stimulants. The Board initiated more than 280 enquiries into the legitimacy of shipments during the period, resulting in 36 shipments being suspended, stopped or seized.

1. Ephedrine and pseudoephedrine

Licit trade

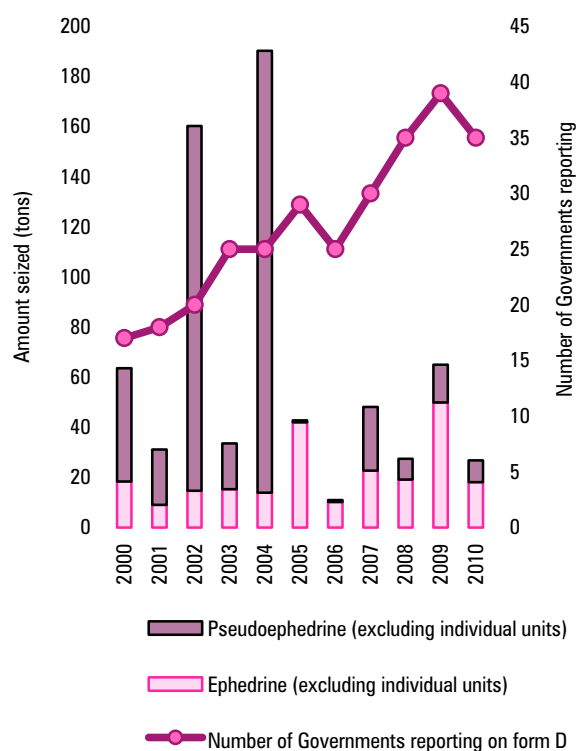
41. During the reporting period, information regarding 3,965 shipments of ephedrine and pseudoephedrine, in both bulk and pharmaceutical preparations, was submitted through the PEN Online system. The amounts involved were 1,130 tons and 1.4 million tablets for pseudoephedrine and 137 tons for ephedrine. Shipments of ephedrine and pseudoephedrine originated in 42 exporting countries and territories and were destined for 143 importing countries and territories. The Board recognizes that successful cooperation and follow-up investigations involving Canada and Belgium confirmed that suspended shipments of 1.6 tons of pseudoephedrine in 2009 were determined to be legitimate and subsequently released.

Trafficking

42. Thirty-five Governments provided information on form D on seizures totalling 26.8 tons of ephedrine and pseudoephedrine in bulk and pharmaceutical preparation forms. Eighteen tons of bulk ephedrine, 110 kg of ephedrine in the form of pharmaceutical preparations, 6.5 tons of pseudoephedrine and 2.2 tons of pseudoephedrine in the form of pharmaceutical preparations were seized. An additional 33.7 million tablets of preparations for the substances were also reported seized. China, India, Mexico and the United States each reported multi-ton seizures in 2010, accounting for 84 per cent of the volume seized. Together, Australia and New Zealand accounted for 1.7 tons, mostly seized in the form of pharmaceutical preparations.

43. Over the past decade, the number of Governments reporting seizures of ephedrine and pseudoephedrine has doubled; however, the amounts reported seized have dropped precipitously, as far less pseudoephedrine is reported seized annually. There are several reasons for the decrease, such as increased utilization of the PEN Online system, which resulted in shipments subsequently being stopped before they were diverted and thus prevented them from becoming seizures; increased diversion of pharmaceutical preparations and challenges in reporting pharmaceutical preparations; shifts in trafficking routes through Africa and other vulnerable regions with weaker precursor control regimes; and, more recently, a greater reliance upon non-scheduled chemicals.

Figure VIII. Seizures reported by Governments on form D of bulk and pharmaceutical preparations containing ephedrine and pseudoephedrine, 2000-2010



44. Since 2005, 65 Governments have reported on form D seizures of more than 220 tons of ephedrine and pseudoephedrine in bulk and pharmaceutical preparation forms. East and South-East Asia accounted for nearly half of the total amounts reported seized, while North America accounted for one quarter. These amounts reflect the fact that those regions are significant legitimate manufacturers and traders in these substances, as well as sources of illicitly manufactured drugs that utilize these chemicals.

45. While substantial seizures of ephedrine and pseudoephedrine were reported by Governments in East and South-East Asia, only six countries reported seizures on form D. Those seizures totalled just 6.4 tons in 2010, significantly less than in 2009 (38.1 tons), with China accounting for the majority of them. China also reported dismantling 378 illicit drug laboratories in 2010, far more than the 244 reported dismantled in 2008, many for the illicit manufacture of methamphetamine. The increase in seizures of clandestine laboratories has been concurrent with an increase in the number of people abusing synthetic drugs recorded in the country's drug registry.

46. Beginning in 2010, significant seizures of pseudoephedrine in the form of pharmaceutical preparations have increasingly been reported throughout the region, suggesting a greater difficulty in obtaining bulk precursors. Authorities in Cambodia and Thailand reported that many of those pharmaceutical preparations had originated in the Republic of Korea. Beyond the 12.8 million tablets seized on the Thailand-Myanmar border as a result of controlled delivery — already reported in 2010 — more than 30 million tablets of pharmaceutical preparations seized in Thailand originated in the Republic of Korea. The identified *modi operandi* and trafficking routes suggest that pharmaceutical preparations are misdeclared and/or smuggled out of the Republic of Korea to Thailand and from there to Cambodia, Malaysia and Myanmar.

47. Traffickers may also be targeting Viet Nam as a source of ephedrine, pseudoephedrine and P-2-P (see para. 72 below). In December 2010, Nicaraguan authorities requested Viet Nam to stop a shipment of 42 million tablets of pharmaceutical preparations containing pseudoephedrine that weighed more than 5 tons, as Nicaragua prohibits the importation of this substance. Australian authorities informed the Board of an increasing number of attempts to use airplane passengers to smuggle ephedrine from Viet Nam.

48. Taiwan Province of China was identified as a source of diverted ephedrine and pseudoephedrine in last year's report, and the situation there remains difficult for the Board to ascertain. According to data published online by the Food and Drug Administration of Taiwan Province of China, 377 kg of ephedrine and pseudoephedrine were reported seized in 2010, more than double the amounts reported for 2009 (148 kg). The circumstances related to these seizures remain unclear; however, online press releases from the Criminal Investigation Bureau of Taiwan Province of China report the dismantling of domestic illicit methamphetamine laboratories, some of large scale and others that were utilizing precursors in the form of pharmaceutical preparations.

49. Diversion of pharmaceutical preparations containing pseudoephedrine from pharmacies (referred to as “smurfing”) remains the primary source of precursors used in the high number of small-scale illicit methamphetamine laboratories in the United States. In October 2010, a national pharmaceutical retailer was found to have allowed a significant number of individuals to purchase amounts of pharmaceutical preparations containing pseudoephedrine that were beyond federal purchase limits over an extended period. Subsequently, more than 145 kg of pseudoephedrine was diverted into illicit channels.

50. A resurgence in small-scale domestic manufacture in the United States has been reported since 2008, with the number of illicit methamphetamine laboratories dismantled increasing by nearly 70 per cent to 6,768 laboratories in 2010. The increase is partially the result of individuals and chemical trafficking organizations circumventing purchase limits on pharmaceutical preparations containing pseudoephedrine and partially a consequence of the growing use of a cruder, simpler “one-pot” manufacturing method that requires less precursor.

51. There has been a decreased reliance upon ephedrine and pseudoephedrine in illicit methamphetamine laboratories in Mexico as a result of increased Government controls, heightened awareness and international cooperation there and in other countries throughout the region, thereby reducing the overall availability of ephedrine and pseudoephedrine to chemical trafficking organizations. Although Mexico and neighbouring countries in Central America reported on form D significant seizures of ephedrine and pseudoephedrine — totalling 5.4 tons in 2010 — a decrease in that trend has been noted since the number of seizures peaked in 2007 and 2008. The United States reported that forensic profiling of seized methamphetamine entering from Mexico found that by 2010 the majority (69 per cent) of the drug was now manufactured via the P-2-P process.

52. The number and amounts of shipments of pharmaceutical preparations reported seized bound for Mexico were far lower than in prior years as well. Since November 2010, only three seizures of pharmaceutical preparations containing pseudoephedrine were reported to the Board, totalling just 97 kg, with an additional 26,000 tablets. All of these shipments were smuggled via air transport service, with two originating in Bangladesh and one in the United Arab Emirates.

53. The Board was informed of the most recent significant seizure of ephedrine in Mexico: in March 2011 authorities seized 1.1 tons of the substance at an industrial-scale clandestine laboratory. The number of illicit drug laboratories reported in Mexico increased from 33 in 2007

to 157 in 2010; most of them were engaged in the illicit manufacture of methamphetamine. Often, these laboratories represent operations of a significant size and level of sophistication, and they are increasingly relying upon non-scheduled precursors such as phenylacetic acid esters in the manufacture of methamphetamine via the P-2-P method.

54. The decline in seized ephedrine and pseudoephedrine was also noted in neighbouring countries in Central America. Guatemala reported via other channels the seizure of 15 kg of ephedrine, 989 kg of pseudoephedrine and 1.47 million pseudoephedrine tablets in 2010. Totals as at mid-May 2011, however, identified only 96 kg of ephedrine and pseudoephedrine and 550,000 tablets of pharmaceutical preparations containing pseudoephedrine seized. Guatemala also reported dismantling several illicit methamphetamine laboratories located near the border with Mexico between May and July 2011. Reports do not specify the types of precursors and other essential chemicals seized at each of those locations.

55. West Asia continues to be a source of methamphetamine for local and international markets. The Islamic Republic of Iran reported that the Anti-Narcotics Police dismantled 166 methamphetamine laboratories in 2010, a significant increase over the 33 laboratories reported dismantled in 2009 and the two reported dismantled in 2008, and that domestic abuse of the drug had also increased. Additionally, authorities reported significant seizures in 2010 and 2011 of smuggled ephedrine originating in Pakistan and the Syrian Arab Republic. In 2010, 294 kg of ephedrine were seized in two separate events; 375 kg were seized in a case in 2011. The Board urges Governments to continue to strengthen their domestic control mechanisms with regard to precursors of amphetamine-type stimulants.

56. The Board is increasingly concerned about the diversion and attempted diversion of ephedrine and pseudoephedrine in Pakistan that began emerging in 2010. The Board was informed of two attempted diversions in 2010 of pharmaceutical preparations containing ephedrine and pseudoephedrine in the amounts of 6,000 kg and 7,200 kg, respectively. The shipments were destined for Iraq; however, authorities there informed the Board that the importing company was neither registered with the Government nor authorized to import either substance. Four separate seizures of smuggled ephedrine, totalling 265 kg, were reported by the Government of Pakistan’s Anti-Narcotic Force. The seizures, which began in August 2010, took place in provinces bordering the Islamic Republic of Iran. In April 2011, authorities at the port of Karachi seized 245 kg of ephedrine smuggled inside spice packages in a sea container bound for Australia. Pakistan is the only country in the region with a significant annual

ephedrine requirement (22 tons), an amount which has grown to become the fourth highest in the world. The Government of Pakistan has expressed concern about diversion and has requested the Board to provide technical assistance in determining its appropriate annual legitimate requirements for ephedrine and pseudoephedrine.

57. West Africa has recently emerged as a source of methamphetamine bound for East Asia. While attempts to divert precursors continue to occur, seizures in the region remain elusive. In July 2011, Nigerian authorities reported discovering their first clandestine methamphetamine laboratory, near Lagos. Preliminary reports identified the presence of acetone, toluene, sulphuric acid and other non-scheduled substances in undisclosed amounts. The source of the chemicals was not reported. Authorities estimated that the operation was large and had a production capacity of between 20 and 150 kg per cycle.

58. Trafficking in methamphetamine originating in countries in East Africa has also been reported by the World Customs Organization. Although no illicit methamphetamine laboratories have been reported in the region to date, several stopped and lost shipments of ephedrine and pseudoephedrine have been reported (see figure VII). For example, in March 2011 Indian authorities suspended a shipment of 300 kg of ephedrine to an unknown company in the Sudan. Repeated attempts to assess the legitimacy of the shipment with the competent national authorities in the Sudan by both India and the Board were not successful. The International Criminal Police Organization (INTERPOL), as a member of the Project Prism Task Force, used its assets in the region to physically check the address of the importing company in the Sudan and subsequently informed the Board that the company was neither registered nor authorized to import the chemical. The shipment was subsequently stopped by Indian authorities. The Board commends the efforts of Indian authorities to require importing countries to actively approve shipments of precursor chemicals in cases in which the company is unknown and calls on other exporting countries to exercise the same level of due diligence.

59. Since 2009, Kenyan authorities have reported significant thefts and/or losses of ephedrine and pseudoephedrine at importing company warehouses and at Nairobi's Jomo Kenyatta International Airport. In November 2010, the Board was informed of the loss of a 500 kg shipment of ephedrine from an airport warehouse. The shipment was destined for Nigeria. In another incident, 25 kg of a 100 kg shipment of pseudoephedrine was lost at a different airport warehouse.

60. Stopped shipments destined for Uganda and Zimbabwe were also reported. In January 2011, Ugandan

authorities requested their German counterparts to stop a shipment of 100 kg of ephedrine, as the importing company was not authorized to import the substance; upon further investigation, the documents were found to have been falsified. Zimbabwean authorities informed the Board in December 2010 that a shipment of 250 kg of ephedrine from India had been stopped, as no import authorizations had been granted.

61. Oceania remains a common destination for smuggled ephedrine and pseudoephedrine in both the bulk and pharmaceutical preparation forms. Australia reported a significant increase in border detections in 2011 of ContacNT, a distinct granular pharmaceutical formulation containing pseudoephedrine. New Zealand's form D reported seizures in 2010 of a record 949 kg, predominately pseudoephedrine and primarily in the form of the pharmaceutical formulation ContacNT. In May 2011, nearly 68 kg of the same smuggled pharmaceutical formulation was seized in a joint operation involving police and customs.

2. Norephedrine and *Ephedra*

62. International trade in norephedrine, which can be used in the manufacture of amphetamine, is increasingly being reported. Ephedrine extracted from the *Ephedra* plant can be used in the manufacture of methamphetamine; however, legitimate trade in this natural product is not reported to the Board. Both norephedrine and *Ephedra* are less commonly reported seized or found in illicit laboratories.

Licit trade

63. During the reporting period, international trade reported through the PEN Online system revealed 12 countries exporting norephedrine to 25 importing countries, with 126 transactions involving a total amount of 40,400 kg.

Trafficking

64. Authorities reporting seizures of norephedrine on form D for 2010 included Australia, Mexico and the United States; trace amounts were also reported by Belarus and Germany. The Board was informed via other channels of a seizure of 2 kg of norephedrine made by Japanese customs from an air passenger originating in Nepal. Seizures of *Ephedra* in 2010 were reported on form D by Australia, with 34 cases totalling 3 kg. Most of the seizures were detected in the postal system and originated in the United States in the form of dietary or weight-loss supplements, which were not necessarily intended for use in the illicit manufacture of drugs.

65. The Board was informed of two significant seizures of cut *Ephedra* plant from Kyrgyzstan in 2010. The first seizure, of 14 tons, was effected by Russian Federation customs officers after it arrived at the Vostochniy seaport from Kyrgyzstan via Kazakhstan. The second seizure of 28 tons occurred in a farm warehouse in Kyrgyzstan. Authorities in both cases reported that the smuggled *Ephedra* was destined for the Republic of Korea. Although totals reported seized in 2010 were sizable, they were significantly lower than the 2,100 tons reported in the Board's 2006 report, owing to increased awareness of trafficking that had been identified through activities under Project Prism.

66. New Zealand authorities have identified the use of *Ephedra* and ephedrine-containing *Sida cordifolia*⁹ plants and plant extracts in a small but growing number of methamphetamine laboratories since 2005. Between 2005 and 2009, there were three confirmed incidents involving *Ephedra* and *Sida cordifolia*; two of those incidents took place at illicit laboratories. In 2010, three additional incidents were confirmed by authorities, and there were three other suspected incidents; all of them involved illicit laboratories. The trend continued into the first half of 2011, during which customs authorities made two seizures totalling 30 kg of *Ephedra* and *Sida cordifolia*, with an additional kilogram seized at an illicit laboratory.

3. 1-Phenyl-2-propanone and phenylacetic acid

67. 1-Phenyl-2-propanone (P-2-P) can be synthesized from phenylacetic acid and can be used in amphetamine or methamphetamine manufacture. The licit international trade in P-2-P, compared with ephedrine and pseudoephedrine, is relatively small and limited to just a few countries, while phenylacetic acid is much more commonly traded. Smuggling of P-2-P continues to be reported in Europe and North America, while its use in alleged cleaning products exported from Jordan has been a concern for years. P-2-P-based methods, including those which start with phenylacetic acid and its esters, play a significantly greater role in the manufacture of methamphetamine than was previously the case, particularly in Mexico.

Licit trade

68. During the reporting period, only 26 shipments of P-2-P, amounting to 17,700 litres, were reported through the PEN Online system. There were 380 shipments of phenylacetic acid, amounting to 210 tons; however, as phenylacetic acid was moved to Table I in January 2011, the number of shipments recorded via PEN Online in the

reporting period increased by 20 per cent over the previous reporting period.

69. Few countries have a legitimate need for P-2-P. Between 2005 and 2010, international trade reported through the PEN Online system revealed 10 countries exporting P-2-P to 26 importing countries, with 128 transactions involving 98,000 litres. China, India and Italy accounted for nearly all exports by volume, while Jordan accounted for more than half of all imports, followed by the United States, Brazil and Turkey.

70. Imports of P-2-P to Jordan for use in cleaning products have been reported to the Board since 1994. The most recent import, of nearly 9,000 litres, occurred in 2010; while no imports have occurred in 2011, the Board is aware that enquiries continue to be made by a Jordanian company regarding the importation of significant amounts of P-2-P into the country. The Board has repeatedly advised the Jordanian authorities and those of all other Governments to exercise caution when authorizing shipments of P-2-P for alleged end-use as a cleaning and disinfection agent, and instead to substitute for that precursor one of many alternative chemicals available for the formulation of such products. Concerns about the legitimacy of the shipments to Jordan and their final destination, Iraq, were supported by the results of the laboratory analysis of the alleged cleaning product communicated to the Board, which showed that P-2-P concentrations were only half of what the manufacturer had stated. The Board has also enquired repeatedly with the authorities of Iraq as to the large number of one-time-only importers of the alleged cleaning product and has requested legitimate end-use verification of the alleged cleaning product. Despite the number of communications sent to the Governments of Jordan and Iraq, the legitimacy of products containing P-2-P has not been established. Therefore, the Board urges the Government of Iraq to investigate and verify the bona fides of importers, brokers and individual end-users of the alleged cleaning product. Additionally, the Board urges the Government of Jordan to strengthen domestic controls over P-2-P and revise its estimates of annual legitimate requirements for the substance to a more adequate level.

71. Between 2005 and 2010, information on international trade in phenylacetic acid reported through the PEN Online system identified 16 exporting countries and 57 importing countries, and 924 transactions totalling 5,775 tons. China, France, Germany, the United Kingdom and the United States accounted for nearly all exports by volume, while the Democratic People's Republic of Korea, Germany, Mexico, the Netherlands and Spain accounted for 95 per cent of all imports.

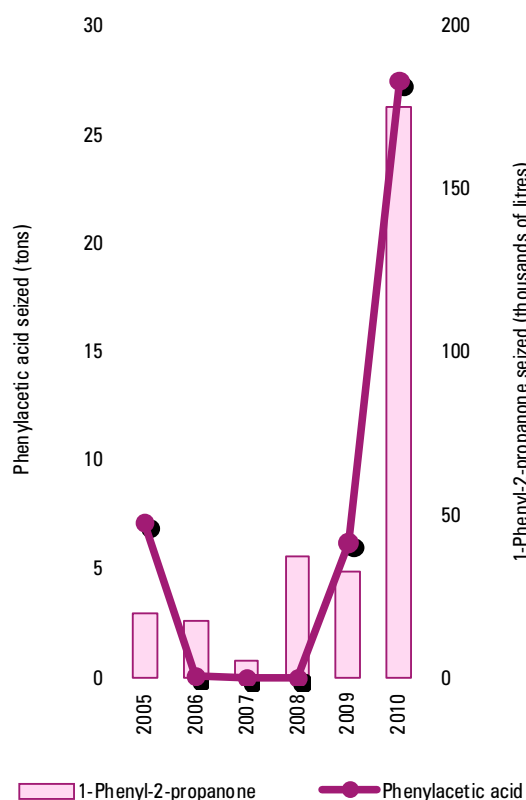
⁹ Reported for the first time in the 2009 precursors report.

Trafficking

72. On form D for 2010, 11 Governments reported a total of 26,294 litres of P-2-P seized, the largest amount since 2005. The majority of seizures (95 per cent) were reported by three countries: Mexico (14,203 litres), Canada (5,924 litres) and Belgium (5,050 litres), with lesser amounts also reported by Hong Kong, China, (660 litres) and the Netherlands (330 litres). Both Belgian and Canadian authorities identified the majority of the seized P-2-P as having originated in Viet Nam, a country where the Board is unaware of any legitimate manufacture, trade or domestic controls with respect to that substance.

73. In May 2011, Serbian authorities reported dismantling a large clandestine amphetamine laboratory; however, the type, quantity and sources of the diverted chemicals were not disclosed. German authorities identified an attempt by a Serbian company to obtain 2,000 litres of P-2-P via the Internet homepage of a German chemical trader in 2010. The Serbian company failed to respond to enquiries related to the legitimate end-use of the substance, and no delivery was made. Bulgarian authorities reported a clandestine laboratory seized in an industrial building northwest of Sofia in January 2011. Approximately

Figure IX. Seizures reported by Governments on form D of 1-phenyl-2-propanone and phenylacetic acid, 2005-2010



2.5 litres of P-2-P were recovered, along with several litres of sulphuric, hydrochloric and formic acids, the sources of which remain under investigation.

74. Phenylacetic acid and its esters now play a far greater role in the manufacture of methamphetamine, particularly in Mexico, than was previously the case. Four Governments reported on their form D for 2010 a total of 183.5 tons of phenylacetic acid seized, which, if diverted into illicit manufacture, would have yielded approximately 46 tons of pure amphetamines. The amounts reported seized were nearly four times the previous record amount of 48 tons set in 2005. Of the four Governments, three reported nearly all of the total seized in 2010: those of China (4.7 tons), Mexico (56.1 tons, plus an additional 907 litres) and the United States (122.7 tons).

75. Since the previous report, there were two stopped shipments of phenylacetic acid reported to the Board. A 300 kg shipment originating in the United Kingdom and destined for Turkey was stopped for administrative reasons. A shipment of 1,125 kg originating in the United States and destined for Mexico was stopped because the company had not applied for an import authorization. Authorities from Colombia requested that a shipment of 10 kg originating in the United States be stopped; however, the shipment had already departed before the pre-export notification was issued.

76. Derivatives of phenylacetic acid, in particular its esters, are increasingly being seized in unprecedented amounts throughout North and Central America. In addition to phenylacetic acid, noted above, Mexico and the United States respectively reported on form D seizing 178,000 litres and 145,000 litres of ethyl phenylacetate, an ester of phenylacetic acid. In 2011 several countries throughout Central America reported seizures of esters of phenylacetic acid (see paras. 89-94 below on Project Prism and Operation PAAD) and moved to control its derivatives and esters.

4. 3,4-Methylenedioxyphenyl-2-propanone and piperonal

77. Both 3,4-methylenedioxyphenyl-2-propanone (3,4-MDP-2-P) and piperonal can be used in the illicit manufacture of, inter alia, MDMA. While there is little legitimate use for 3,4-MDP-2-P, and subsequently little international trade in the substance, the opposite is true for piperonal. Increasingly, Governments have informed the Board that they have no legitimate need for 3,4-MDP-2-P. The amounts of those substances reported seized remain far lower than would be expected given the volume of MDMA available.

Licit trade

78. During the reporting period, only five shipments of 3,4-MDP-2-P were reported through the PEN Online system, totalling just 2 litres, while 541 shipments amounting to 1,902 tons were reported for piperonal. Eleven countries informed the Board of a legitimate need for 3,4-MDP-2-P, totalling 127 kg annually. Fifty-seven Governments informed the Board that they had no annual legitimate requirements for the import of 3,4-MDP-2-P.

79. Trade in 3,4-MDP-2-P also occurred outside the PEN Online system. Between 2005 and 2010, international trade of 3,4-MDP-2-P as reported through the PEN Online system revealed only 11 transactions, totalling 205 litres and involving just eight countries; however, during the same period, additional countries reported trade on form D. In some cases, that was because commerce was between intra-communitarian partners of the European Union; the importing country had not invoked article 12, paragraph 10 (a), of the 1988 Convention requiring pre-export notification; or the countries were not registered with the PEN Online system.

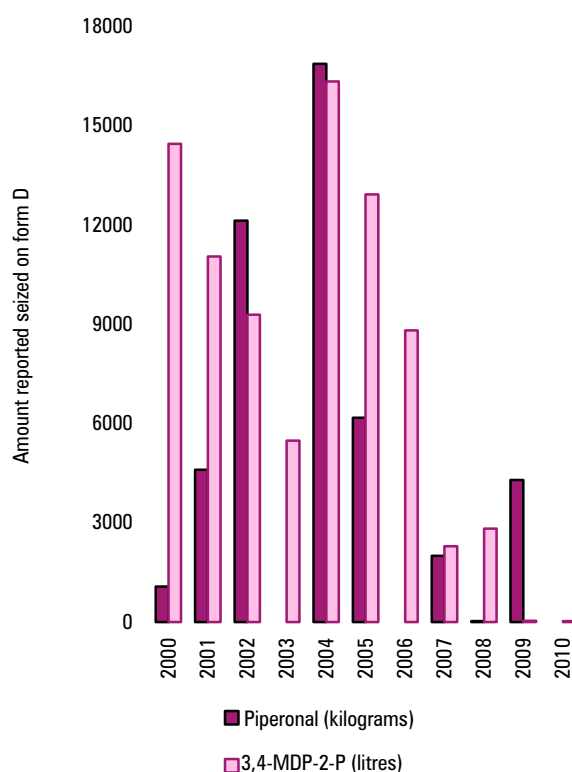
80. Between 2005 and 2010, international trade of piperonal as reported through the PEN Online system identified 1,982 transactions involving 9,857 tons exported by 19 countries and destined for 65 countries. The top five exporters accounted for 98 per cent of total volume: China; Hong Kong, China; the United Kingdom; Spain; and Brazil. In view of the significant volumes of piperonal traded internationally and the tightening of controls on other precursors, the Board urges Governments to closely monitor movements of piperonal in both international and domestic trade.

Trafficking

81. Only two countries reported seizing 3,4-MDP-2-P on form D for 2010, with a total volume of just 2.1 litres, and only one country reported seizing trace amounts of piperonal. These were far lower amounts than at any time in the past decade. The discrepancy observed in recent years between the size and frequency of MDMA seizures and those of the precursors under international control required in its manufacture continued in the reporting period.

82. In 2010 there was a single stopped shipment of piperonal from China to Viet Nam, in the amount of 1,000 kg. Authorities in Viet Nam reported that the importing company had never applied for an import licence for the substance.

Figure X. Seizures reported by Governments on form D of 3,4-MDP-2-P and piperonal, 2000-2010



5. Safrole and safrole-rich oils

Licit trade

83. During the reporting period, the Board was informed of 45 shipments of safrole, including the substance in the form of safrole-rich oils, consisting of a total volume of 256,000 litres. Ninety-nine per cent of trade volume in safrole was in the form of safrole-rich oils.

84. Between 2005 and 2010, international trade in safrole as reported through the PEN Online system comprised 176 transactions involving 562,400 litres exported by 13 countries and destined for 31 countries. Viet Nam accounted for nearly all of the export volume, while three countries — Brazil, China and Spain — accounted for 95 per cent of the total import volume.

Trafficking

85. Five countries reported seizures of safrole on their 2010 form D, in amounts totalling 168 litres, the lowest amount recorded since 2006. The Netherlands reported the greatest amount (85 litres), followed by Australia and New Zealand, with trace amounts in Germany and the

United States. In none of the cases were the origins of the safrole identified.

86. Cambodia continued to be the only country reporting large-scale seizures of safrole and safrole-rich oils. Authorities informed the Board that 7 tons of safrole had been seized in 2010. While there is currently no evidence that seized safrole-rich oils sourced from Cambodia have been used in the illicit manufacture of MDMA, the likelihood of this scenario remains. **The Board encourages the Governments of countries with plant species rich in safrole and/or safrole production to remain vigilant to the possibility of their diversion for illicit drug manufacture.**

87. In August 2011, Mexican authorities reported seizing 2,500 litres of safrole at the seaport of Manzanillo. The substance had originated in the Republic of Korea and was misdeclared as cleaning chemicals. This event represented the first seizure of safrole reported to the Board by Mexico. In addition, since June 2010, there have been three suspicious shipments of safrole to Mexico, one of which was stopped. This development, together with infrequent reports of illicit MDMA laboratories in Mexico within the context of the increasing number of sophisticated illicit methamphetamine laboratories now being reported, points to a risk of diversification in the manufacture of amphetamine-type stimulants into MDMA in Mexico.

6. Non-scheduled substances and trends in illicit manufacture

88. Increased controls and awareness of the illicit use of traditional precursors have heightened the risk and subsequent costs to chemical trafficking organizations. Increasingly, criminals are turning to non-scheduled substitute chemicals, in the form of pre-precursors or “designer” precursors, for the illicit manufacture of amphetamine-type stimulants. While many of these developments are region-specific, the likelihood of such methods spreading to other regions should not be underestimated.

Project Prism — Operation PAAD

89. Under the direction of the Project Prism Task Force, Operation PAAD was launched in March 2011 to gather strategic information on the trade, trafficking and illicit use of phenylacetic acid and its derivatives. The highly successful six-month operation was the first under Project Prism to systematically target emerging non-scheduled substances, and included participation from 63 countries. In addition to the PEN Online system, Operation PAAD utilized offline notifications to track shipments of non-scheduled derivatives of phenylacetic acid.

90. Operation PAAD resulted in 24 communications to Task Force members regarding seizures of chemicals in various ports of entry, warehouses and clandestine laboratories totalling 610 tons, along with an additional 1.4 tons of stopped shipments. Significant seizures were reported by the Governments of Belize, El Salvador, Guatemala and Mexico. Although there are numerous derivatives and esters of phenylacetic acid, the most commonly identified ester during the operation was ethyl phenylacetate.¹⁰ The Board urges competent authorities to raise awareness among all concerned national authorities and industries that attempts are being made to obtain esters of phenylacetic acid for illicit purposes and to ensure that mechanisms are in place that enable industry to fully cooperate in identifying and investigating suspicious orders. Governments are encouraged to treat the esters of phenylacetic acid the same way they treat phenylacetic acid.

91. During Operation PAAD, there were 25 shipments seized, of which 11 were identified as being destined for Mexico (284 tons), followed by 8 to Guatemala (196 tons) and one each for Belize (15 tons) and Nicaragua (17 tons). Twenty shipments were seized in west-coast seaports, while two were seized in east-coast seaports — in Belize and Mexico. Seven of the shipments, comprising 37 per cent of the total volume, had either been misdeclared or utilized false labels. Backtracking investigations have been launched in cooperation with the Government of China.

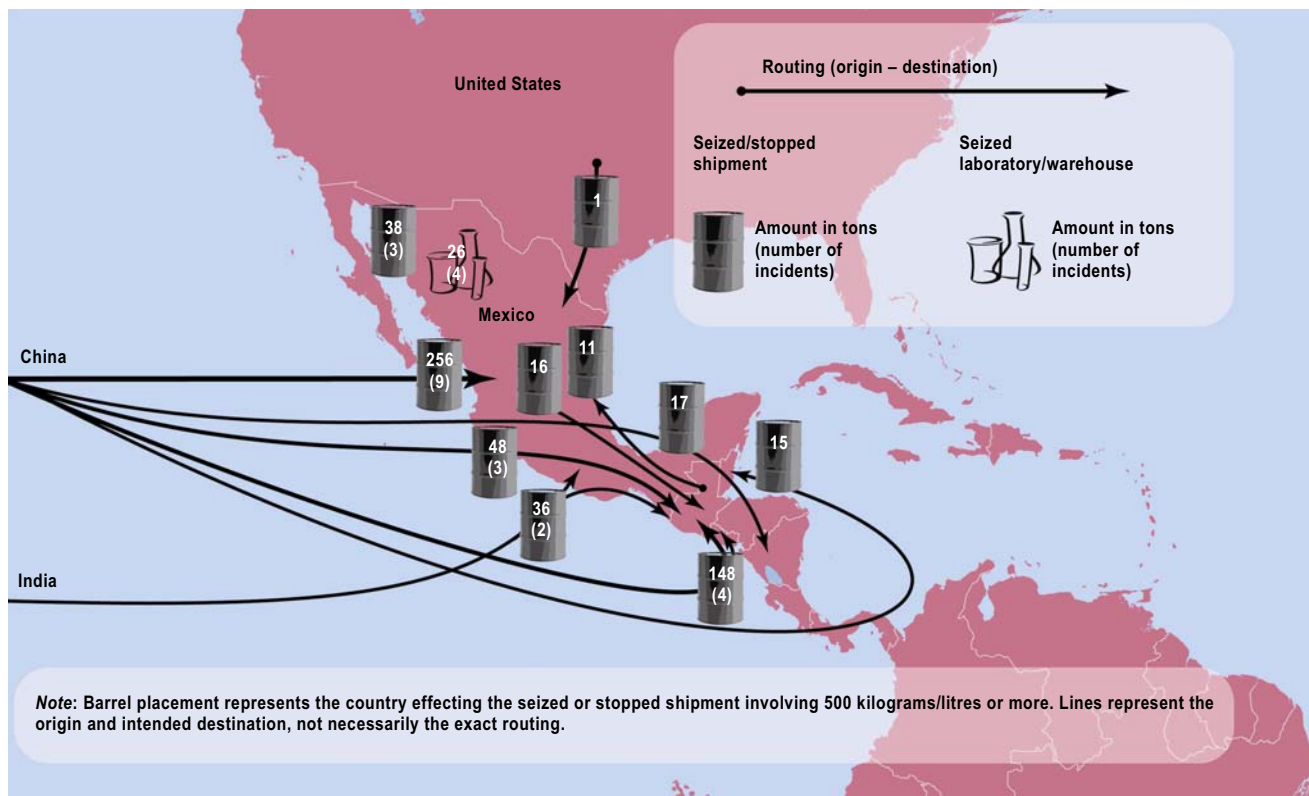
92. Mexico reported 20 seized shipments of phenylacetic acid derivatives, totalling 421 tons. The origin of 16 shipments was reported; 13 originated in China and two in India. Six of the shipments, totalling 93 tons, were seized en route to or from Guatemala, while one shipment was destined for Nicaragua. El Salvador seized nearly 150 tons of phenylacetic acid ethyl ester in four shipments from China destined for Guatemala. According to information from the Container Control Programme, implemented jointly by UNODC and the World Customs Organization, an additional 22 containers of PAAD chemicals were seized in Guatemala during the operational period; these were later confirmed by the Government of Guatemala.

93. Significant amounts of PAAD chemicals were also seized from large illicit warehouses and clandestine laboratories during the operational period. One industrial-scale illicit laboratory dismantled in southern Mexico in May 2011 contained 11,000 litres of ethyl phenylacetate among the 140,000 litres of chemicals seized. In addition, Mexican authorities reported the seizure of an illicit warehouse with almost 800 tons of phenylacetamide, another derivative of phenylacetic acid.¹¹ Between May

¹⁰ Also referred to as phenylacetic acid ethyl ester.

and July 2011, Guatemala reported seizing five methamphetamine laboratories near the border with Mexico; in at least one case, PAAD chemicals were identified but the amounts were not reported.

Figure XI. Trafficking routes of chemicals communicated under Operation PAAD



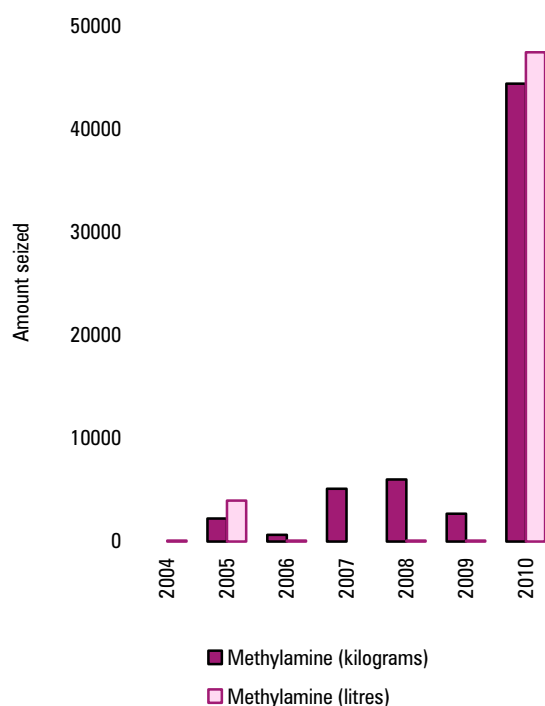
94. Ethyl phenylacetate converts to phenylacetic acid, yielding about 75 per cent (approximately 135 kg are required to produce 100 kg of phenylacetic acid). Other chemicals commonly required in this conversion include acetic anhydride. Depending on the synthetic route used and the practical conversion efficiency, approximately 150 kg of acetic anhydride are required for each 100 kg of phenylacetic acid produced. Acetic anhydride may, however, be substituted by non-scheduled chemicals such as lead acetate, which has been recovered at some illicit laboratories in Mexico. The Board encourages all Governments to place special emphasis on the identification of chemicals that can be used to convert phenylacetic acid and its esters into P-2-P, in particular acetic anhydride.

Other non-scheduled substances used in the manufacture of amphetamine-type stimulants

95. Methylamine is a non-scheduled substance which, when used together with P-2-P or 3,4-MDP-2-P, can produce methamphetamine and MDMA, respectively. Seizures of methylamine have been reported to the Board in increasing numbers since 2004, primarily by countries in North America, but such seizures have also been reported in Oceania, Europe and East and South-East Asia. On its form D for 2010, Mexico reported seizing 44.3 tons and an additional 47,300 litres of methylamine; it was followed by the Netherlands, Canada, and the United States. By mid-2011, Mexico had reported three large seizures of methylamine at seaports, totalling more than 154,000 litres and originating in China. Methylamine has been controlled in Mexico since November 2009. El Salvador reported seizing almost 69 tons of methylamine in two seizures in June 2011 in the western seaport of Acajutla; the shipments had been destined for Guatemala.

¹¹ Although phenylacetamide is a derivative of phenylacetic acid, it was outside the scope of Operation PAAD.

Figure XII. Seizures reported by Governments on form D of methylamine, 2004-2010



96. Since 2005, seizures of small amounts of 1-phenyl-1-propanone (P-1-P),¹² a substance that can be used in the manufacture of ephedrine, have been reported to the Board by Australia, the Czech Republic and the Netherlands; however, Canadian authorities reported on form D that 640 litres of the substance had been seized in 2010. Since November 2009, Indian authorities have reported dismantling four facilities involved in the illicit manufacture of ephedrine from P-1-P. Authorities in India report that the method used to manufacture ephedrine from P-1-P is significantly more expensive than the conventional method used in licit manufacture but is substantially less expensive than obtaining ephedrine via illicit channels.

97. Further to a development identified in last year's report, Polish authorities reported on form D the seizure of 220 kg of *alpha*-phenylacetonitrile (APAAN), an immediate precursor of P-2-P, in a clandestine P-2-P laboratory and related storage site in 2010. Authorities reported that the source of the substance was China. Authorities in the Netherlands informed the Board that two large laboratories for the conversion of APAAN into P-2-P that were dismantled at the beginning of 2011, and in August a single consignment containing 1,000 kg of APAAN was seized in the port of Rotterdam. Information

from the Netherlands suggests that, based on prevailing illicit market prices, P-2-P illicitly manufactured from APAAN is significantly less expensive than comparable amounts of P-2-P on the illicit market. Large seizures of APAAN have also been reported in other European Union member States and Turkey since 2009.

98. The Board was informed by two countries of benzyl cyanide, a precursor of P-2-P, being used in illicit drug manufacture in 2010. Mexico reported on its form D seizing 3,820 kg of the substance. Authorities in the Republic of Korea reported through other channels methamphetamine manufacture from benzyl cyanide, the first time that method had been reported used in the country. At the time, the substance was not under control in the Republic of Korea; however, in 2011, benzyl cyanide was designated as a drug precursor.

99. A greater reliance upon 3,4-MDP-2-P methyl glycidate in the manufacture of MDMA is occurring, particularly in Western and Central Europe, as almost no 3,4-MDP-2-P was reported seized in 2010. 3,4-MDP-2-P methyl glycidate was first described in the Board's 2010 report. Authorities from the Netherlands identified the substance in an illicit laboratory in April 2010 and reported seizing a total of 1,200 kg of the substance in 2010. In one case, 1,000 kg was reported seized in an air-freight shipment arriving from China that had been misdeclared. Danish authorities also reported seizing 800 kg of the substance in March 2011; that shipment was later determined to be part of a series of related shipments that had originated in China and were destined for the Netherlands. Slovakia was another country that effected seizures from this series of shipments.

100. Methylamine, P-1-P, APAAN, benzyl cyanide and 3,4-MDP-2-P methyl glycidate are listed on the Board's limited international special surveillance list of non-scheduled substances. That list is available on request and can also be accessed on the Board's restricted web page. The Board urges competent national authorities to familiarize themselves with the limited international special surveillance list of non-scheduled substances and use it as a tool in cooperation with concerned industries.

B. Substances used in the illicit manufacture of cocaine

1. Potassium permanganate

101. Potassium permanganate is a common oxidizing agent used in the manufacture of cocaine hydrochloride. The combination of no recent incidents of diversion from international trade and low overall seizure rates compared

¹² Also known as propiophenone or ethyl phenyl ketone.

with the volume of oxidized cocaine seized suggests that the extent of its illicit use, its sources and/or its trafficking patterns have changed. While little licit international trade occurs with coca-producing countries, global seizures of potassium permanganate continue to be concentrated in that region. The decrease in the number of seizures may be a result of the growing illicit manufacture of the substance, greater reliance upon other substitute chemicals, or a possible shift of some cocaine processing into other more vulnerable areas outside the Andean subregion, such as Central America.

Licit trade

102. During the reporting period, 1,674 shipments of potassium permanganate were reported through the PEN Online system, totalling 27,300 tons. Between 2005 and 2010, international trade of potassium permanganate as reported through the PEN Online system accounted for 5,783 transactions involving 118,564 tons. There were 38 exporters of the substance; the top five exporters by volume were China, the United States, India, the Czech Republic and Hong Kong, China, which together accounted for 96 per cent of the total. There were 160 importers of the substance; the top five by volume were the Islamic Republic of Iran, Thailand, Japan, Spain and Hong Kong, China, accounting for 41 per cent of imports.

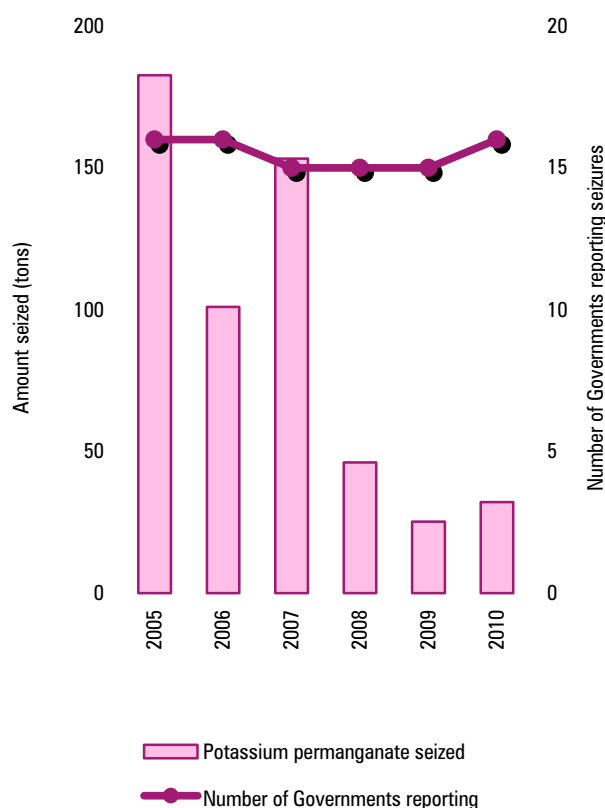
103. According to data from the PEN Online system, the global trade in potassium permanganate occurred mainly outside of the South American region. The coca-producing countries, namely Bolivia (Plurinational State of), Colombia and Peru, accounted for less than 1 per cent of imports by volume between 2005 and 2010.

Trafficking

104. Sixteen Governments reported seizures of potassium permanganate on form D for 2010, totalling 32.1 tons. While this amount was larger than in 2009 (25.2 tons), it was the second-lowest amount reported seized in the past decade. Eighty-seven per cent of the volume reported seized occurred in South American countries, with nearly all of that reported by the coca-producing countries. Colombia alone seized 26.4 tons, or 81 per cent of the potassium permanganate reported seized in 2010. The Plurinational State of Bolivia has not reported seizing potassium permanganate on form D since 2005; however, through the Inter-American Drug Abuse Control Commission, the Board learned of 3.6 tons seized in that country between 2006 and 2009.¹³

¹³ See Organization of American States, Inter-American Drug Abuse Control Commission, *Bolivia: Evaluation of Progress in Drug Control 2007-2009* (2010).

Figure XIII. Seizures reported by Governments on form D of potassium permanganate, 2005-2010



105. UNODC independently estimates a range for the amount of pure cocaine hydrochloride manufactured annually, based on two conversion factors.¹⁴ Based on the assumptions that potassium permanganate is used for all illicit manufacture of cocaine hydrochloride, that all processing occurs in coca-producing countries and that the amount needed to process cocaine base into hydrochloride is one fifth¹⁵ of the final hydrochloride amount, an order of magnitude for the total amount of potassium permanganate available for illicit manufacture can be estimated. Between 2005 and 2010, potential cocaine

¹⁴ See *World Drug Report 2011*, United Nations publication, Sales No. E.11.XI.10, p. 264.

¹⁵ See annex VIII of the present report. There are indications that at least in Colombia an additional (re-)oxidation step is now commonly employed in cocaine hydrochloride crystallization laboratories to ensure a uniform oxidation level of the cocaine base prior to its conversion into the hydrochloride salt. While this increases the efficiency of the base-to-hydrochloride conversion, it also has an impact on the amount of potassium permanganate required. Revised approximate conversion figures are as yet not available.

hydrochloride production averaged between 929 and 1,165 tons, which would require between 186 and 233 tons of potassium permanganate. With an average of about 81 tons of potassium permanganate reported seized by coca-producing countries each year since 2005, an estimated 266 to 314 tons of potassium permanganate is potentially available every year as a result of diversion and/or illicit manufacture. During the reporting period, the amount reported seized would suggest that approximately

26 to 30 per cent of the amount of potassium permanganate available for use in the region was interdicted annually. There is a relatively high correlation between estimates of cocaine manufacture and the seizure of potassium permanganate in the region (0.92). There appears to be a decreasing rate of interdiction, as the amount of potassium permanganate reported seized annually has decreased at rates faster than the decrease in the rate of cocaine manufacture.

Table 1. Estimated potassium permanganate needed as compared with total potential cocaine manufactured annually, 2005-2010

<i>Potassium permanganate in processes of cocaine hydrochloride manufacture</i>	2005	2006	2007	2008	2009	2010	<i>Average 2005-2010</i>
Potential pure cocaine manufactured (tons) ^a							
Previous conversion factors ^b	1 020	1 034	1 024	865	842	786	929
New conversion factors ^b	1 201	1 232	1 264	1 125	1 111	1 054	1 165
Potassium permanganate needed in the manufacture of cocaine hydrochloride (tons) ^c							
Based on previous conversion factors	204	207	205	173	168	157	186
Based on new conversion factors	240	246	253	225	222	211	233
Potassium permanganate reported seized in coca-producing countries (tons) ^d							
Potassium permanganate	141	100	146	43	27	27	81
Total estimated available potassium permanganate for illicit cocaine manufacture (sum of amounts needed and seized; tons)							
Based on previous conversion factors	345	307	351	216	195	184	266
Based on new conversion factors	381	347	399	268	249	238	314
Proportion of total available potassium permanganate interdicted (range)							
			<i>Percentage</i>				
Interdicted (low)	37	29	37	16	11	11	26
Interdicted (high)	41	33	42	20	14	15	30

Sources:

^a UNODC, *World Drug Report 2011*, p. 264.

^b The new conversion factors of UNODC are based on the most recent information published in the *World Drug Report 2010* (p. 251), which suggests that the efficiency of cocaine alkaloid extraction from coca leaves that occurs at illicit laboratories is similar in each of the coca-producing countries. The old conversion factors were based on studies carried out in 1993 and 1994, which suggested large variations in the efficiency of alkaloid extraction among coca-producing countries.

^c Annex IV to the present document.

^d Form D and Organization of American States, Inter-American Drug Abuse Control Commission, *Bolivia: Evaluation of Progress in Drug Control 2007-2009* (2010).

106. Outside of the coca-producing region, the only other notable seizures of potassium permanganate reported on form D occurred in Central Asia. In 2010 Kazakhstan seized a total of 3,285 kg — the second highest of any reporting country — originating in China. Uzbekistan

reported seizures of 626 kg originating in the Russian Federation. The circumstances surrounding those seizures were not provided, nor was the suspected use of the substance. Previously, both countries had reported only small amounts of potassium permanganate being seized.

107. There are indications that illicit cocaine processing may increasingly be occurring along trafficking routes outside the Andean region. Honduran authorities for the first time reported dismantling a cocaine laboratory, near the border with Guatemala in March 2011. The large operation had been converting cocaine base into hydrochloride. Chemicals seized included 50 kg of potassium permanganate, nearly 2,500 litres of hydrochloric acid, 208 litres of sulphuric acid and significant quantities of other non-scheduled chemicals.

108. Illicit cocaine-processing laboratories have been reported previously in Spain; however, authorities there reported dismantling the largest, most sophisticated operation to date in January 2011. The processing laboratory was discovered on a farm near Madrid, where authorities seized 33 tons of essential chemicals, including 11,345 litres of toluene, 8,060 litres of methyl ethyl ketone, 6,400 litres of acetone, 350 litres of sulphuric acid, 300 litres of hydrochloric acid and other non-scheduled chemicals. The origins of the chemicals were not disclosed. As the refinement and adulteration of cocaine can occur anywhere along cocaine trafficking routes, the Board urges

all Governments to pay attention to shipments of chemicals that can be used in the illicit manufacture of cocaine, especially extracting solvents.

2. Other chemicals

109. Colombian authorities estimated that between 60 and 80 per cent of seized potassium permanganate might itself be illicitly manufactured. Nevertheless, while there were on average 12 illicit potassium permanganate laboratories seized annually between 2000 and 2006, there were only two to four such laboratories dismantled annually over the past four years. The starting material typically used in these laboratories is manganese dioxide, a common ore of manganese, which is converted to potassium manganate and further to potassium permanganate. Colombian authorities reported seizing an unprecedented 605 tons of potassium manganate in 2010. The most recent reported case of diversion of potassium permanganate from international trade was in 2006. The manufacture of potassium permanganate in coca-producing regions is thus the result of a combination of factors: illicit manufacture, domestic diversion and smuggling.

Table 2. Select illicit laboratories reported dismantled in Colombia by type, 2000-2010

<i>Illicit laboratories</i>	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Cocaine paste and base	405	469	1 296	834	1 556	1 780	2 071	2 186	3 147	2 670	2 334
Cocaine crystallization	221	1 084	138	637	240	163	201	285	296	285	262
Potassium permanganate	6	10	9	11	19	16	15	4	4	2	2

Source: Observatorio de Drogas de Colombia, Drug Information System of Colombia.

110. Acids and solvents are required at various stages of illicit drug manufacture. The majority of the world's reported seizures of Table II acids and solvents occur primarily in three coca-producing countries of the Andean region. Between 2005 and 2010, Bolivia (Plurinational State of),¹⁶ Colombia and Peru accounted for on average roughly

half of all global seizures of ethyl ether, hydrochloric acid, methyl ethyl ketone and sulphuric acid. Ninety percent of global seizures of acetone and nearly a third of toluene seizures were also reported in those countries.

¹⁶ As at 2005, the Government of the Plurinational State of Bolivia no longer reported seizures of substances on form D. Seizures of those substances by the Bolivian authorities between 2006 and 2009 were reported in 2011 to the Multilateral Evaluation Mechanism of the Inter-American Drug Abuse Control Commission of the Organization of American States. Data were unavailable for 2010.

Table 3. Percentage of global seizures of acids and solvents in Table II reported by coca-producing countries, 2005-2010

<i>Table II solvents and acids</i>	2005	2006	2007	2008	2009	2010	Average 2005-2010
Acetone	90	89	91	93	90	91	91
Ethyl ether	70	53	34	82	69	26	57
Hydrochloric acid	41	21	55	47	58	50	42
Methyl ethyl ketone	47	65	74	67	53	51	62
Sulphuric acid	24	26	61	56	75	66	37
Toluene	34	16	39	9	6	53	30

Source: Form D and Organization of American States, Inter-American Drug Abuse Control Commission, *Bolivia: Evaluation of Progress in Drug Control 2007-2009* (2010).

C. Substances used in the illicit manufacture of heroin

Acetic anhydride

111. Acetic anhydride is one of the most widely traded Table I substances, with hundreds of millions of litres traded annually. Nevertheless, that is only a fraction of the estimated amount produced globally each year. Only a tiny proportion of that amount is required to satisfy the needs of global illicit drug manufacture. The number of identified diversions of acetic anhydride from international trade has declined in recent years, with most of the reported cases now involving seizures from domestic distribution channels prior to smuggling, often to Afghanistan, the world's largest producer of heroin.

Licit trade

112. During the reporting period, authorities of 27 exporting countries and territories provided over 1,550 pre-export notifications for shipments of acetic anhydride through the PEN Online system. Shipments were destined for 93 importing countries and territories and involved a total of 362 million litres.

113. Between 2005 and 2010, international trade in acetic anhydride as reported through the PEN Online system accounted for 6,600 transactions totalling 1.2 billion litres, an average of 200 million litres traded annually. Of the 32 exporters, the top five — the United States, Mexico, China, Switzerland and Belgium — accounted for 87 per cent of that volume. There were 122 importers, of which the top five importers by volume — Germany, the Netherlands, China, Belgium and Mexico — accounted for 62 per cent of imports. Several of the countries that

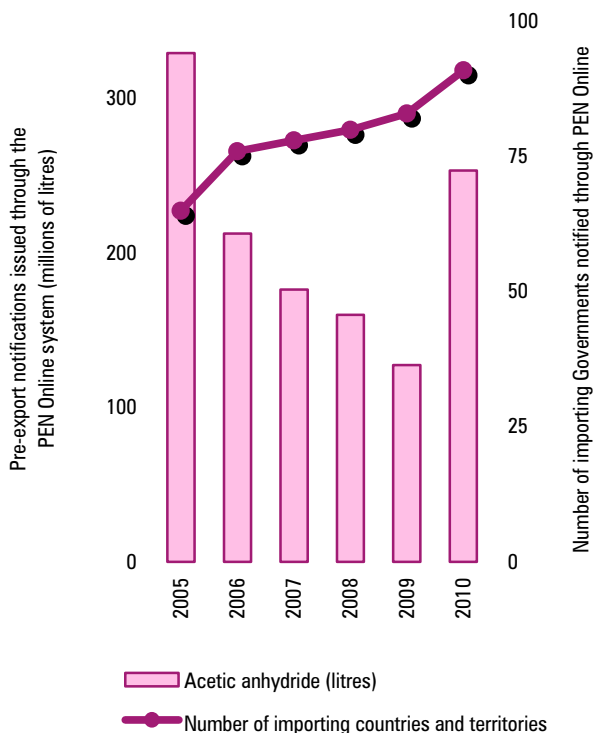
are major importers and exporters are in fact major re-exporters. In addition, large amounts of the substance produced are not traded, but rather directly consumed by manufacturing companies.

114. Most exporting countries that have provided notifications through the PEN Online system for shipments of acetic anhydride have in place a control system based on individual export permits; however, not all international trade in acetic anhydride is reported through the PEN Online system. Between 2005 and 2009, the number of destination countries increased by 40 per cent; however, the total amount for which export notifications were provided decreased by 21 per cent, as fewer notifications via the PEN Online system were issued from exporters in North America and member States of the European Union.¹⁷

115. The decrease in the number of notifications through the PEN Online system is partially a result of the fact that shipments of acetic anhydride and other chemicals under international control traded within the 27 European Union member States are not reported through the PEN Online system. Analysis and understanding of licit trade are further complicated by the fact that international trade of acetic anhydride is organized using huge storage facilities at major ports — so-called “tank farms” — from which the substance is further distributed within the intra-communitarian market.

¹⁷ Increases in 2010 reflected increased use of the PEN Online system, particularly by Mexico.

Figure XIV. Number of Governments receiving pre-export notifications of acetic anhydride through the PEN Online system and totals traded, 2005-2010



Trafficking

116. The volume of acetic anhydride reported seized on form D fluctuated greatly between 2005 and 2010, with 38 Governments reporting 388,000 litres seized; however, only a small number of countries reported significant amounts seized during that time. For example, the 10 countries reporting the most seizures between 2005 and 2010 accounted for 94 per cent of the volume seized. Those countries include Bulgaria, Hungary, the Russian Federation, Slovenia and Turkey.

117. On form D for 2010, 14 Governments reported a total of 128 seizures of acetic anhydride, amounting to nearly 60,000 litres. Six Governments reported seized amounts of greater than 1,000 litres, including Bulgaria (21,111 litres), China (16,346 litres), Pakistan (16,178 litres), Mexico (4,821 litres) and Colombia (1,007 litres). With the exception of Colombia, the totals from each of those countries were at their highest levels since 2005.

118. The Board notes that several Governments did not provide information regarding acetic anhydride seizures that occurred in 2010 on their form D. For example,

sources of information other than form D indicate that seizures of acetic anhydride of at least 10 tons occurred in Turkey and at least 14.5 tons in the United Arab Emirates. The Board reminds Governments that the reporting of seizures on form D is mandatory and is the principal source of information for assessing the latest trafficking trends.

119. Although no legitimate trade in acetic anhydride destined for Afghanistan occurred, large amounts continued to be smuggled across its borders. Acetic anhydride destined for Afghanistan continued to be diverted from domestic distribution channels, primarily in countries outside the region, and subsequently smuggled into the country. The countries neighbouring Afghanistan were used as transit countries for acetic anhydride contraband from the countries/points of diversion, as evidenced by information from past investigations and reports on licit trade.

120. Seizures of acetic anhydride occur regularly in Afghanistan, but to date the Government has never reported seizures on its form D. Nevertheless, UNODC, Programme Global Shield and the International Security Assistance Force (ISAF) in Afghanistan all reported various seizures taking place in 2010. For example, Programme Global Shield reported 3.5 tons of acetic anhydride seized, although it is uncertain whether that was destined for illicit drug manufacture. In 2011, ISAF also identified several multi-ton seizures of drug precursors seized from heroin laboratories throughout the country. The specific substances and amounts were not reported, however. The Board is also aware that between January and July 2011 more than 50 samples of acetic anhydride were analysed in the forensic laboratory of the Counter-Narcotics Police of Afghanistan. It is nevertheless unclear how the analysed samples relate to seizures in the country. **The Board urges the Government of Afghanistan to develop systems to improve the information regarding seizures provided to the Board in accordance with article 12 of the 1988 Convention.**

121. Tajikistan shares its southern border with Afghanistan and has been used by traffickers as a transit country for shipments of acetic anhydride. In March 2011, Tajik authorities provided information on a seizure of 375 litres of acetic anhydride. In the same month, authorities in the Russian Federation seized about 740 litres, which traffickers had attempted to obtain from a legitimate manufacturer in the Russian Federation, using falsified end-use documents to smuggle the substance via Tajikistan into Afghanistan. Authorities in Tajikistan are cooperating with authorities in the Russian Federation in the prosecution of those responsible.

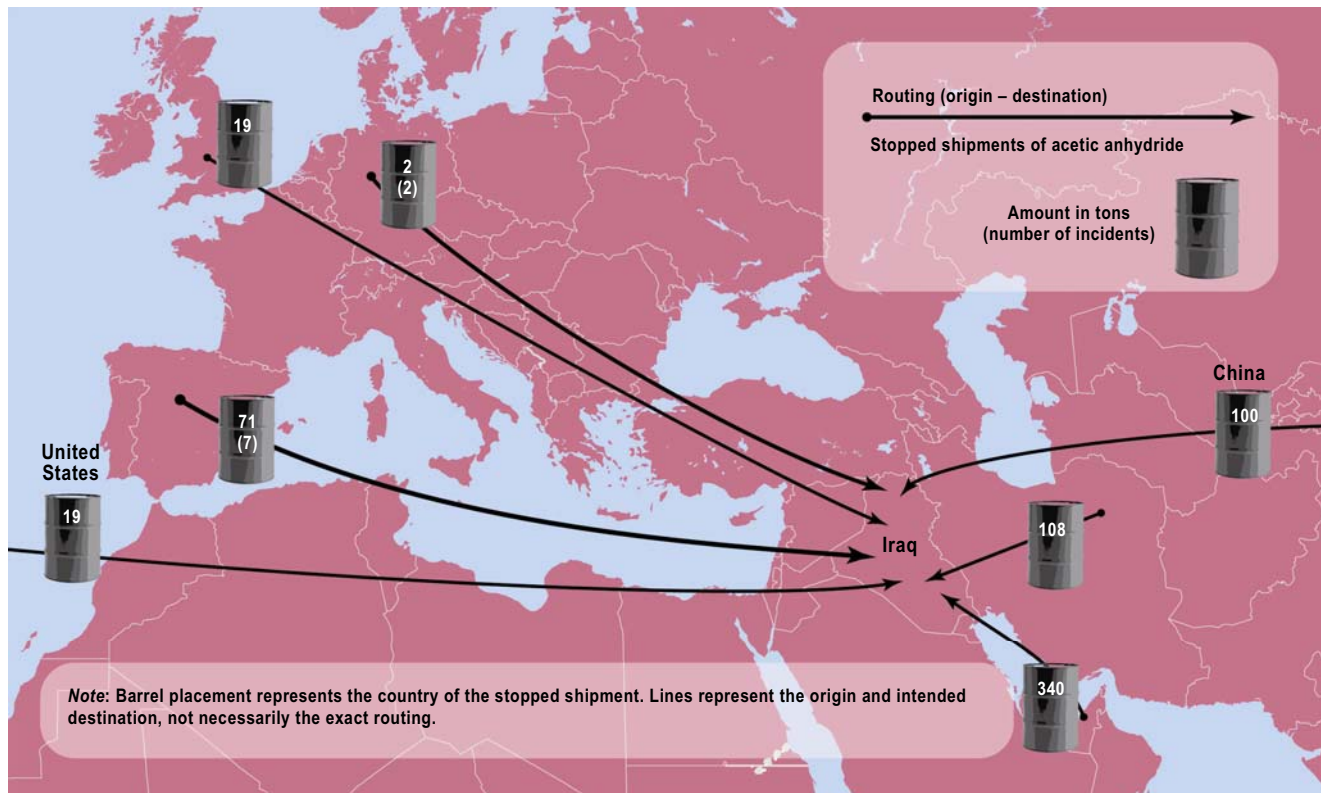
122. There was also an additional seizure of 6,500 litres of acetic anhydride in Hungary in 2011, as a result of continuing investigations in Europe following a peak in the amount of seizures in 2008. The joint investigations conducted by several European countries assisted in the identification of loopholes in the precursor control mechanism in the European Union. The Board is aware of efforts by the European Union to strengthen the precursor control mechanism applied in the region.

123. Beginning in 2008, the Project Cohesion Task Force identified significant increases in orders for acetic anhydride placed by companies in Iraq previously not known to the Board, primarily from European exporters. The Government of Iraq reported that many of those companies had no legitimate requirements or authorization for importing the substance and, through successful international cooperation with the authorities of exporting countries, prevented the diversion of 650 tons of the substance. The last such attempt was in December 2010 and involved 100,000 litres (108 tons) of acetic anhydride destined for Iraq, which was subsequently stopped by the

authorities in the Islamic Republic of Iran. The Board urges Governments exporting acetic anhydride to unknown or suspicious companies in Iraq to require authorization before releasing the shipment.

124. UNODC independently estimates annual global manufacture of heroin, most of which originates in Afghanistan. Based on the assumption that acetic anhydride is the acetylation reagent of choice for all illicit manufacture of heroin, that all acetic anhydride seized is used for illicit heroin manufacture and that the amount of acetic anhydride needed to process morphine into heroin has remained unchanged over time at a ratio of between 1:1 and 4:1,¹⁸ an order of magnitude for the total acetic anhydride diverted can be estimated. Between 2005 and 2010, UNODC estimates average annual heroin manufacture of 634 tons, which would require between 634,000 and 2,537,000 litres of acetic anhydride. Combined with an average of about 65,000 litres of acetic anhydride reported seized annually each year since 2005, an estimated 699,000 to 2,602,000 litres of acetic anhydride are potentially available every year for illicit manufacture. The amount reported seized during the period would suggest

Figure XV. Diversion attempts of acetic anhydride destined for Iraq, as identified under Project Cohesion, 2008-2011



¹⁸ See annex IV. There are indications that current acetic anhydride requirements are at the lower end of this range; however, the extent to which illicit laboratories operate at higher efficiencies cannot be quantified.

Table 4. Estimated acetic anhydride needed as compared with total potential heroin manufactured annually, 2005-2010

<i>Acetic anhydride in processes of heroin manufacture</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>Average 2005-2010</i>
Potential global heroin manufacture of unknown purity (tons) ^a	529	472	629	757	752	667	634
Acetic anhydride needed in the manufacture of heroin (thousands of litres): ^b							
At a ratio of 1:1	529	472	629	757	752	667	634
At a ratio of 4:1	2 116	1 888	2 516	3 028	3 008	2 668	2 537
Acetic anhydride reported seized on form D (thousands of litres) ^c	22	26	57	201	21	60	65
Total estimated available acetic anhydride for illicit heroin manufacture (amounts needed + amounts seized):							
At a ratio of 1:1	551	498	686	958	773	727	699
At a ratio of 4:1	2 138	1 914	2 573	3 229	3 029	2 728	2 602
	<i>Percentage</i>						
Proportion of total estimated diverted acetic anhydride interdicted (low estimate)	1	1	2	6	1	2	2
Proportion of total estimated diverted acetic anhydride interdicted (high estimate)	4	5	8	21	3	8	9

^a World Drug Report 2011, chap. 2.3.

^b Annex VIII.

^c Form D.

that approximately 2 to 9 per cent of the amounts of acetic anhydride available for illicit use in manufacture are interdicted annually. The low interdiction rates in part illustrate the lack of reporting of significant seizures of the substance, particularly in Afghanistan. This can also be seen in the lack of seizures reported for Table II acids and solvents in the region.

125. Mexico is both a producer and a major trader of acetic anhydride. The country reported large increases in seizures of acetic anhydride beginning in 2009 (440 litres) and continuing through 2011. Between December 2010 and June 2011, eight separate incidents related to seizures of acetic anhydride were reported via Operation PAAD and other channels, totalling more than 56,000 litres. One industrial-scale illicit methamphetamine laboratory alone accounted for nearly 48,000 litres of seized substance. Although illicit poppy cultivation and heroin manufacture have increased in Mexico, nearly all of the seized acetic anhydride reported was recovered in clandestine methamphetamine laboratories, reflecting the shift to phenylacetic acid and the P-2-P method for illicit

methamphetamine manufacture. The Board is concerned that, if such large amounts of acetic anhydride are able to find their way into methamphetamine laboratories, it cannot be ruled out that chemical trafficking organizations can also source acetic anhydride for heroin manufacture outside Mexico.

D. Substances used in the illicit manufacture of other narcotic drugs and psychotropic substances

Ergot alkaloids and lysergic acid

Licit trade

126. There is comparatively little trade in ergot alkaloids. During the reporting period, 399 shipments of ergot alkaloids (ergotamine and ergometrine and their salts), totalling 1,794 kg, were reported; 19 countries exported to 54 importing countries. In addition, there were

10 shipments of lysergic acid totalling 9.2 kg during the reporting period.

127. Between 2005 and 2010, international trade of ergot alkaloids as reported through the PEN Online system accounted for 1,178 transactions totalling 7,068 kg, or an average of 1,178 kg traded annually. During that six-year period, there were 15 exporters of the substance, of which the top three exporters by volume were the Czech Republic, Switzerland and Italy, accounting for 98 per cent of volume. There were 64 importers, of which the top five by volume were Turkey, Switzerland, Argentina, India, and Chile, accounting for 59 per cent of imports. International trade in lysergic acid reported through the PEN Online system was almost non-existent, with a total of 31.5 kg traded between 2005 and 2010 originating in two countries and destined for just three countries.

Trafficking

128. Seizures of ergot alkaloids and lysergic acid are rare and typically involve very small amounts, which do not appear to have been diverted from international trade. For 2010, only two Governments provided information on seizures of ergot alkaloids on form D: Australia (99.7 g) and Mexico (2,000 g). Australia identified four seizures originating in Thailand and one seizure from the United Kingdom. Mexico did not identify the origin of its seizure. Two Governments provided information on seizures of lysergic acid, the origins of which were not identified: the Russian Federation (102.1 g) and Australia (4.3 g).

Other non-scheduled substances

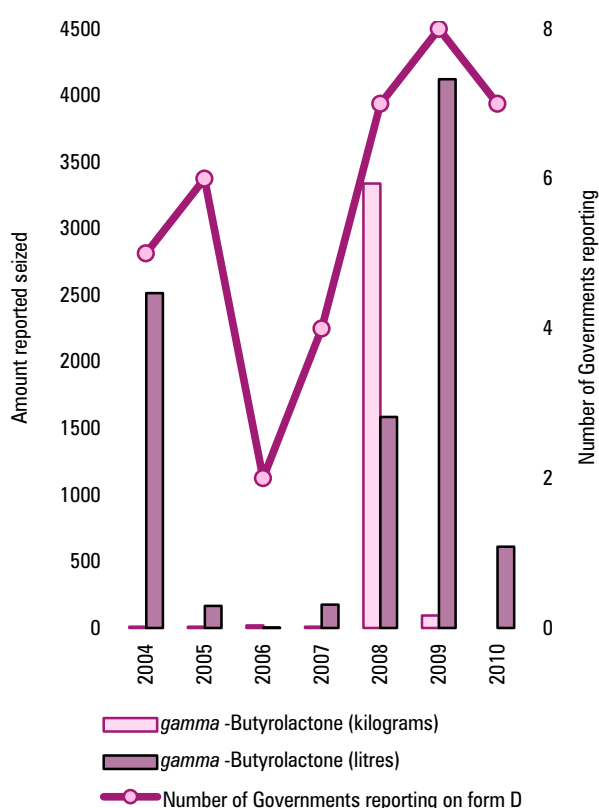
129. Several countries have reported dismantling illicit laboratories that had been used to manufacture fentanyl. Canada, Slovakia and the United States each reported via other channels dismantling illicit fentanyl laboratories in 2011. Canada's report of a laboratory in the western part of the country represents its first reported case of illicit manufacture of the drug. In March, the United States reported seizing a laboratory in the eastern part of the country. Slovakia reported seizing a laboratory in August 2011. In each case, information related to the precursor type, amounts and how they were obtained was not provided. In August 2010, the Drug Enforcement Administration of the United States designated 4-anilino-N-phenethyl-4-piperidine, an immediate precursor to fentanyl, for control under the Controlled Substances Act. Four essential precursors for the illicit manufacture of fentanyl and some of its derivatives are included in the Board's limited international special surveillance list of non-scheduled substances to ensure that competent authorities and concerned industries are aware

of the potential use of these substances in illicit drug manufacture.

130. The Government of South Africa has reported an increasing number of dismantled methaqualone laboratories since 2008, with five dismantled in 2010. In April 2011, an industrial-scale methaqualone laboratory, including 800 kg of synthesized methaqualone powder, was discovered in Cape Town. The chemicals present suggested methaqualone manufacture starting from the non-scheduled substance isatoic anhydride. Additional chemicals were seized; however, the type, amounts and source of diversion were not disclosed. Based on the evidence available, it was estimated that the laboratory had produced more than 2.8 tons of methaqualone hydrochloride in the past.

131. *Gamma*-butyrolactone (GBL) is a precursor used in the illicit manufacture of *gamma*-hydroxybutyric acid (GHB) and is also converted into GHB when ingested. Governments are increasingly reporting seizures of this chemical, and in greater amounts, on their form D. It has been reported to the Board that GBL is commonly sold on the Internet as part of "GHB kits", which include basic instructions and pre-measured quantities of the necessary precursors required for illicit manufacture. For example, in 2010 Estonia detected 57 shipments of the substance (ranging from 0.5 to 5 litres) in postal or courier parcels, which typically had been ordered via the Internet. The following Governments provided information on form D on seizures since 2004: Australia, Belgium, Canada, Denmark, Estonia, Finland, Germany, Hungary, Netherlands, Norway, Spain and United States. Owing to its conversion in the human body to GHB, GBL was identified for pre-review by the World Health Organization's Expert Committee on Drug Dependence in 2006. In the meantime, the Board added the substance to the limited international special surveillance list of non-scheduled substances in 2007.

Figure XVI. Seizures reported by Governments on form D of gamma-butyrolactone, 2004-2010



IV. Twenty years of international precursor control: progress and challenges

132. Over the past 20 years, the Board has reported on the international community’s progress in implementing precursor control.¹⁹ There have been many accomplishments: the 1988 Convention has been acceded to by most countries; national legislation and monitoring infrastructure have been developed; and communication has increased, as has international cooperation. Much has been learned, patterns of diversion have been identified and controls with respect to international trade have been adapted and strengthened.

133. Substantively, most controlled chemicals are now more difficult to obtain from international trade than they were 20 years ago, as a result of an increasing number of countries having precursor legislation in place, as well as greater regulatory and monitoring capacity and awareness among relevant industries. The tightening of control

measures in an increasing number of countries is reflected, for example, in routes of diversion having become more complex and in non-scheduled substances, especially immediate precursors with few legitimate uses other than as intermediates in legitimate industries, now being commercially available, substituting for the more strictly controlled traditional chemicals.

134. The effective tools available to Governments are increasingly comprehensive, but, while their simplicity in design allows for increasing use by all competent national authorities, they have not had universal implementation. Equal progress has not been seen among all countries, with lower-income countries and indeed entire regions lagging behind. Gaps in global coverage remain, as technical assistance has been neither prioritized nor provided at an adequate level. As criminal chemical trafficking organizations become more organized, specialized and resourceful in their methods of circumventing effective international controls, so too must individual Governments and the international community adapt and respond.

A. Progress

135. Since 1988, the Board has developed and deployed the annual precursor questionnaire (form D); begun the collection, organization and analysis of data; extended assistance to Governments in organizing and coordinating their approaches to the monitoring and control of precursors; and developed and maintained the precursor databank.

136. Most Governments have established competent national authorities responsible for regulating or enforcing national controls over precursors. While 188 such authorities exist, to date 21 countries have not yet reported a competent national authority.²⁰ This is true primarily among African countries, where nine countries, or one in six, have no competent national authority responsible for precursor control at the national level, making the African region vulnerable to attempts by traffickers to obtain chemicals for illicit purposes.

¹⁹ The Board’s first report on the implementation of article 12 was issued in 1991 (E/CN.7/1991/21 and Corr.1).

²⁰ The Board has not been informed of competent national authorities for the 1988 Convention by the following Governments: Albania, Angola, Belarus, Belize, Burundi, Comoros, France (Martinique), Haiti, Liberia, Liechtenstein, Malawi, Marshall Islands, Mauritania, Mongolia, Mozambique, Nauru, Palau, San Marino, Somalia, South Sudan and Yemen.