COMMENTS ON THE REPORTED STATISTICS ON NARCOTIC DRUGS

Summary

The analysis in this section of the technical publication is based on statistical data furnished by Governments. The quality of the analysis depends on the data provided.

On the basis of this information, it seems possible that global opium production dropped considerably in 2013. For many years, India has been the only licit producer of opium for export and, even though the official data were not received at the time of drafting this report, it is clear that the increasing demand for opiate raw material for the manufacture of narcotic drugs is being met more and more from poppy straw. About 91 per cent of the morphine and 99 per cent of the thebaine manufactured worldwide were obtained from poppy straw, while the remainder was extracted from opium.

The demand for the natural alkaloids that are obtained from the opium poppy plant (morphine, codeine, thebaine and oripavine) continued to be high in 2013, in line with the trend of the preceding 20 years, although with some adjustments. Australia, France, Hungary, Spain and Turkey were the main producer countries in 2013, together accounting for about 93 per cent of global production of poppy straw rich in morphine. Australia was the main producer of poppy straw rich in thebaine, followed by Spain and then France. Together, those three countries accounted for about 99 per cent of global production. India remained the only licit supplier of opium to the world market.

Manufacture of morphine has risen over the past two decades, reaching almost 440 tons in 2007; after 2007, levels of morphine manufacture fluctuated, reaching a record level of 523 tons in 2013. Morphine, like codeine, is used in therapy and for conversion into other opioids. Global consumption of morphine for the treatment of severe pain has risen by a factor of more than four over the past two decades, stabilizing at 45 tons in 2013. The increase was due mainly to increasing consumption in high-income countries, while consumption levels in most other countries remained very low.

Manufacture of codeine stood at 361 tons in 2013, down from 414 tons in 2012, which was the highest level ever reported. Codeine is the most commonly consumed opiate in the world in terms of the number of countries in which it is consumed. In 2013, consumption reached 249 tons, which was below the highest level ever reported (283 tons, in 2011).

Manufacture of thebaine increased sharply after the late 1990s and reached an all-time high of 158 tons in 2012, but dropped to 146 tons in 2013. However, this seems to be a temporary pause in an increasing trend that is likely to continue, due to the high demand for the alkaloid.

In 2013, almost all the semi-synthetic opioids registered decreases in manufacturing and consumption (except for the manufacture of oxycodone and the consumption of dihydrocodeine, both of which increased slightly). Hydrocodone remained the narcotic drug with the highest consumption in terms of doses consumed. Global consumption of hydrocodone amounted to 39.6 tons in 2013, a decrease from 46 tons in 2012. In 2013, global consumption of oxycodone decreased, while consumption of hydromorphone increased. The use of dihydrocodeine (29.8 tons in 2013) also increased, while the use of pholcodine (8.6 tons in 2013) decreased.

Fentanyl is the synthetic opioid with the highest consumption in terms of doses consumed. Consumption of fentanyl has followed an increasing trend, reaching a high of 1.7 tons in 2010, an amount that was also reached in 2013. Consumption of methadone increased, with some fluctuations, and amounted to 31 tons in 2013. Diphenoxylate consumption also increased in recent years, reaching almost 20 tons in 2013. Global use of dextropropoxyphene (134 tons in 2013) and pethidine (6.7 tons in 2013) has shown a generally downward trend over the past 10 years.

The generally increasing trend in the manufacture of methadone over the past 20 years has stabilized, with 41.4 tons manufactured in 2013 (5.5 tons less than in 2012). Buprenorphine manufacture has continued to increase, reaching a peak of 8.7 tons in 2013.

Global licit production of cannabis was reported to be 60.4 tons in 2013, below the record high of 77 tons in 2012, but still considerably above the 24.9 tons registered in 2011. It is expected that in 2014 there will be a further increase, since several countries are considering the possibility of instituting medical cannabis programmes and the possibility of prescribing medicines based on cannabis extracts.

Coca leaf production stabilized at about 2,500 tons in 2013. This amount does not include data from the Plurinational State of Bolivia, which has provided the Board with information on its licit cultivation, manufacturing and consumption of coca leaf for the first time. This information is being reviewed and clarified with the Government. Global licit manufacture of cocaine continued to register the fluctuating trend of the past 20 years by increasing to 419 kg in 2013, from the 403 kg reported in 2012.

1. The present comments are intended to facilitate the use of the statistical information on the licit production, manufacture, consumption,[1] utilization[2] and stocks of, as well as trade in, opiate raw materials, the main opioids, including synthetic narcotic drugs under international control, and cannabis, coca leaf and cocaine that is presented in the tables of reported statistics (see pages 131-248 and 403-445). Unless otherwise indicated, the comments refer to developments during the period 1994-2013.

2. The tables of reported statistics in part four of and annexes IV and V to the present report contain data furnished by Governments to the International Narcotics Control Board (INCB) in accordance with article 20 of the 1961 Convention. The most recent statistical data reflected in the comments are those relating to 2013. The failure by some Governments to submit reports or to provide precise and complete reports may have a bearing on the accuracy of some of the information presented below.[3] The most pertinent conclusions and recommendations of INCB based on the analysis of statistical data are included in chapter II of its annual report.[4]

[1]For the purposes of the 1961 Convention, a drug is regarded as "consumed" when it has been supplied to any person or enterprise for retail distribution, medical use or scientific research; and "consumption" is construed accordingly (art. 1, para. 2).

[2]The parties shall furnish the International Narcotics Control Board (INCB) with statistical returns on the utilization of narcotic drugs for the manufacture of other drugs, of preparations in Schedule III of the 1961 Convention and of substances not covered by the Convention, and on the utilization of poppy straw for the manufacture of drugs.

[3]Details on the submission of statistical reports by individual Governments are contained in annex I to the present publication.

[4]E/INCB/2014/1.

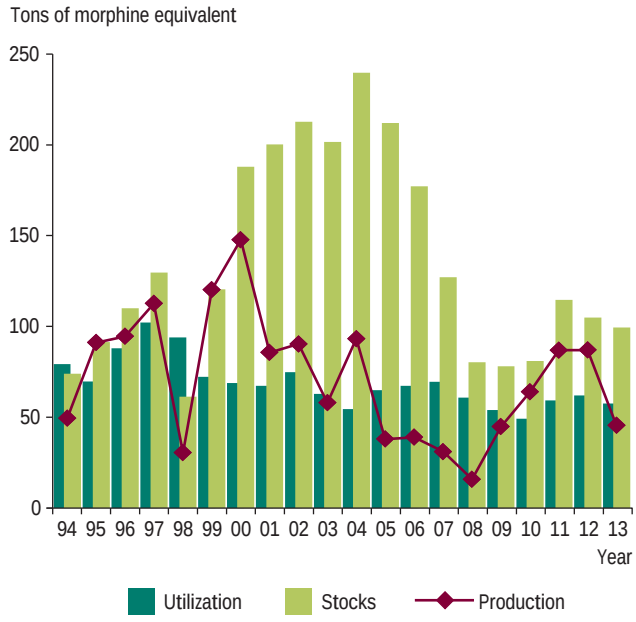
Opiate raw materials

3. Opium and poppy straw are the raw materials obtained from the opium poppy plant (*Papaver somniferum*), from which alkaloids such as morphine, thebaine, codeine and oripavine are extracted. Concentrate of poppy straw is a product obtained in the process of extracting alkaloids from poppy straw. It is controlled under the 1961 Convention. Detailed information on the supply of opiate raw material and demand for opiates for medical and scientific purposes is provided in part three of the present publication.

Opium

4. Opium (also called "raw opium") is the latex obtained by making incisions on the green capsules of opium poppy plants. For statistical and comparison purposes, data on the production of and trade in opium are reported at 10 per cent moisture content. When appropriate, the data on opium are also expressed in morphine equivalent,[5] in order to enable comparison between opium and poppy straw. Figure 1 shows the licit production, stocks and use (consumption and utilization) of opium during the period 1994-2013, expressed in morphine equivalent. Not included in the data on stocks and use are the amounts of illicitly produced opium that were seized and released for licit purposes.

Figure 1. Opium: global production, stocks[a] and use (consumption and utilization),[b] in morphine equivalent, 1994-2013



[a]Stocks as at 31 December of each year.
[b]Excluding the utilization of seized opium in Iran (Islamic Republic of), Myanmar and Turkey.

5. The majority of opium is produced in India (96 per cent), but at the time of preparation of this publication India had not provided their statistical returns with information on production, manufacture, utilization and stocks for 2013. Therefore, the secretariat of INCB has extrapolated the figures on the basis of the information previously provided by India on the estimated area of cultivation,

[5]The morphine or thebaine equivalent is calculated by INCB on the basis of the industrial yield of the respective alkaloid obtained from opium or poppy straw. Lesser alkaloids contained in opium or poppy straw that are convertible into morphine or thebaine have also been included, adjusted by appropriate conversion rates, whenever the Board has been informed of their extraction in commercially significant quantities.

which indicated a considerable reduction. On the basis of this information it is possible to state that global opium production dropped considerably in 2013 (from 790.2 tons in 2012 to 413 tons in 2013), and consequently the amount of opium imported and exported decreased. In addition, global stocks of opium decreased by 50 tons (from 953 tons in 2012 to 903 tons in 2013). However, the use of opium remained in line with previous years and almost all opium available globally was manufactured to produce other drugs, with only a small amount (23 tons) being used for Schedule III preparations.

6. Despite the reduction mentioned above, India remains the major producer of opium, accounting for over 96.8 per cent of global production and almost all (99.2 per cent) of global exports. Other countries produce smaller amounts of opium, but exclusively for internal consumption and/or utilization. China produced 3 per cent (12.6 tons) of the global production, while the Democratic People's Republic of Korea (427 kg) and Japan (1 kg) produced minimal amounts. In China, poppy straw has replaced opium as the main raw material for the manufacture of alkaloids since 2000.

7. India is the only licit supplier of opium to the world market, and most of the opium produced in India is destined for export. Opium exported from India contains morphine in a concentration of 9.5 to 12.0 per cent, codeine in a concentration of about 2.5 per cent and thebaine in a concentration of 1.0 to 1.5 per cent. As shown in figure 2, imports from India have fluctuated in recent years, but dropped to 313 tons (or about 34 tons in morphine equivalent) in 2013. The United States of America and Japan continued to be the main importing countries, accounting for 60 per cent and 36 per cent of total imports in 2013, respectively. The Islamic Republic of Iran has imported opium irregularly in the past but did not report any imports in 2013.

8. The bulk of opium is used for the extraction of alkaloids. Total utilization of licitly produced opium for the extraction of alkaloids followed a declining trend during the period under consideration. Utilization remained stable at 522 tons, or 57 tons in morphine equivalent, in 2013 (excluding the utilization of seized opium in the Islamic Republic of Iran)[6] (see figure 3). The United States, India and Japan, in descending order, are the main users of opium for the extraction of alkaloids, together accounting for 99 per cent of the global total in 2013. The Islamic Republic of Iran reported manufacturing over 209 tons in 2013 (about 28.5 per cent of the global total), but this quantity is not accounted for since it concerns opium seized from illicit trafficking. The Democratic People's Republic of Korea is the only other country reporting the use of opium (0.6 per cent) for the extraction of alkaloids in 2013. The cultivation of opium poppy in the Democratic People's Republic of Korea is characterized by a very low yield, which is attributed by the competent national authority of the country to unfavourable climate conditions and a lack of fertile soil. Details on the utilization of opium for the extraction of alkaloids and the alkaloids obtained are provided in table III.

Figure 2. Opium: imports from India, in morphine equivalent, 2004-2013

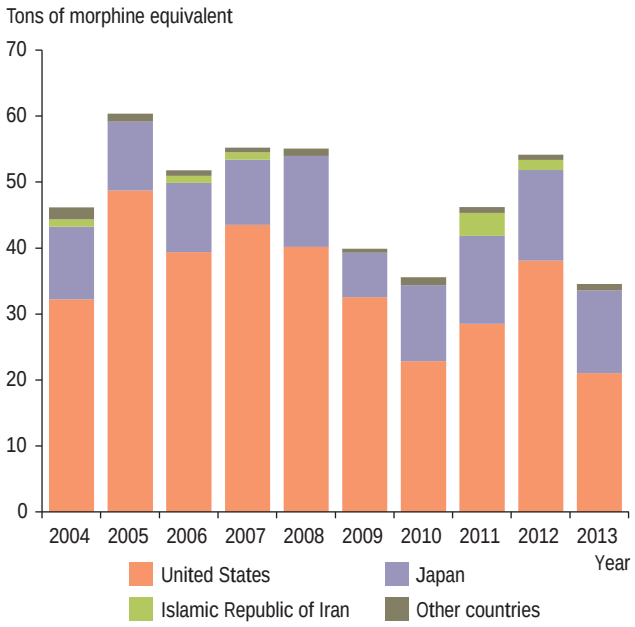
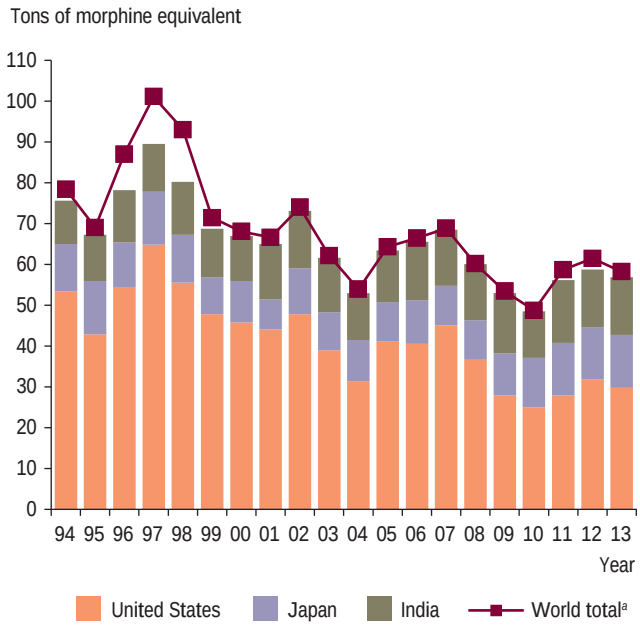


Figure 3. Opium: utilization for the extraction of alkaloids, in morphine equivalent, 1994-2013



[a]Excluding the utilization of seized opium in Iran (Islamic Republic of), Myanmar and Turkey.

[6]In the Islamic Republic of Iran, in addition to licitly produced opium imported from India, seized opium is released regularly in large quantities for the extraction of alkaloids. The yield of alkaloids extracted from seized opium is usually less than from licitly produced opium.

9. While the majority of opium is used for the extraction of alkaloids, opium is also consumed in some countries in the form of preparations, mainly for the treatment of diarrhoea and coughs. Most of those preparations are included in Schedule III of the 1961 Convention.[7] Global consumption of opium has fluctuated, averaging about 16.8 tons per year since 2001. Total consumption in 2013 was stable at 25.7 tons, which corresponds to 257 million defined daily doses for statistical purposes (S-DDD).[8] In 2013, consumption and use of opium for the manufacture of preparations in Schedule III amounted to 13.5 tons in China, 4.5 tons in India and 3.5 tons in France. Myanmar also reported consuming just above 2 tons of opium, but since the country does not have licit cultivation it is assumed that this originated from seizures.

10. Global stocks of opium reached a peak in 2004 (2,176 tons) and then began to decrease. In 2013, they continued to decline, to 902 tons (or 99.2 tons of morphine equivalent) from 953 tons in 2012. India controls the largest amount of opium stocks (722.4 tons, or 80 per cent of the global total), followed by Japan (99.6 tons), the United States (55.5 tons) and China (17 tons).[9] It must be noted that the United States has reduced its stocks by 60 per cent over the period of one year. This, together with the overall reduction in production, seems to confirm the continuing trend towards the gradual phasing out of opium in favour of concentrate of poppy straw.

Poppy straw

11. Poppy straw consists of all parts of the opium poppy plant after mowing, except the seeds. Morphine is the predominant alkaloid found in the varieties of opium poppy plant cultivated in most producing countries. Commercial cultivation of the opium poppy plant with high thebaine content started in the second half of the 1990s. In the present publication, poppy straw produced from varieties of opium poppy plant rich in morphine is referred to as "poppy straw (M)", poppy straw produced from varieties of opium poppy plant rich in thebaine is referred to as "poppy straw (T)", and poppy straw produced from varieties of opium poppy plant rich in codeine is referred to as "poppy straw (C)". Some of those varieties contain, in addition to the main alkaloid (morphine, thebaine or codeine), other alkaloids that can be extracted, such as morphine, thebaine, codeine and oripavine.

12. The concentration of alkaloids in poppy straw varies significantly among the producing countries. Production levels of poppy straw among those countries can be compared only by use of a common denominator, which is the morphine or thebaine equivalent of the quantity of poppy straw produced in each country. Commercial cultivation of the opium poppy plant with a high codeine content started in Australia in 2010 and in France in 2013. For statistical purposes, the quantities of poppy straw produced from that variety of opium poppy are recorded under "poppy straw (M)".

Poppy straw produced from opium poppy rich in morphine (poppy straw (M))

13. Although the submission of statistics on the production of poppy straw is voluntary, most countries cultivating opium poppy plants for the extraction of alkaloids provide such information. Global production of poppy straw (M) expressed in morphine equivalent followed an increasing trend in the two decades prior to 2013. Production fluctuated sharply, mainly because of weather conditions and in response to the demand in manufacturing countries. Production reached about 430 tons in morphine equivalent in 2003 and declined to about 218 tons in 2008. Production increased strongly in 2013 and reached 472 tons (see figure 4). Throughout the two decades prior to 2013, Australia, France, Spain and Turkey were the main producer countries. In 2013, the leading producer was Australia (190 tons in morphine equivalent, accounting for 40 per cent of global production), followed by France (101 tons, or 21 per cent), Spain (83 tons, or 17 per cent) and Turkey (67 tons, or 14 per cent). Other main producers of poppy straw (M) in 2013 were Hungary, the United Kingdom of Great Britain and Northern Ireland, China, Slovakia and the former Yugoslav Republic of Macedonia, which together accounted for the remaining global production in morphine equivalent.

14. In 2013, production of poppy straw (M) increased in Australia, France and Turkey. In particular, after a considerable decrease between 2011 and 2012 (from 164 to 14 tons), Turkey produced 67 tons in 2013. Changes in the area cultivated with opium poppy plant, the amounts of poppy straw (M) harvested and the yields obtained in producing countries are shown in table II.

15. International trade in poppy straw (M) as a raw material continues to be limited, with the Czech Republic being the main exporter of poppy straw for the purpose of extraction of alkaloids (see annex IV, table 1). The Czech Republic, which cultivates opium poppy plants primarily for the production of seeds, produces poppy straw as a by-product and exports it to Slovakia, where it is used for the extraction of alkaloids. Such poppy straw has a

[7] Preparations included in Schedule III of the 1961 Convention are exempt from several control measures that are otherwise mandatory for preparations containing narcotic drugs, including reporting on their consumption and international trade.

[8] The list of defined daily doses for statistical purposes (S-DDD) and an explanation of that concept are contained in the notes to table XIV.1.

[9] For production of, stocks of and demand for opium, see also part three of the present publication, entitled "Supply of opiate raw materials and demand for opiates for medical and scientific purposes".

Figure 4. Poppy straw (M): production in morphine equivalent, 1994-2013

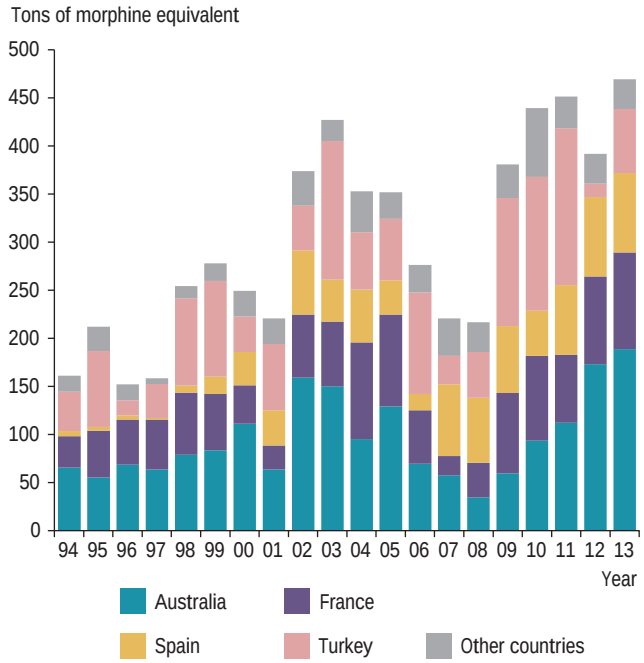
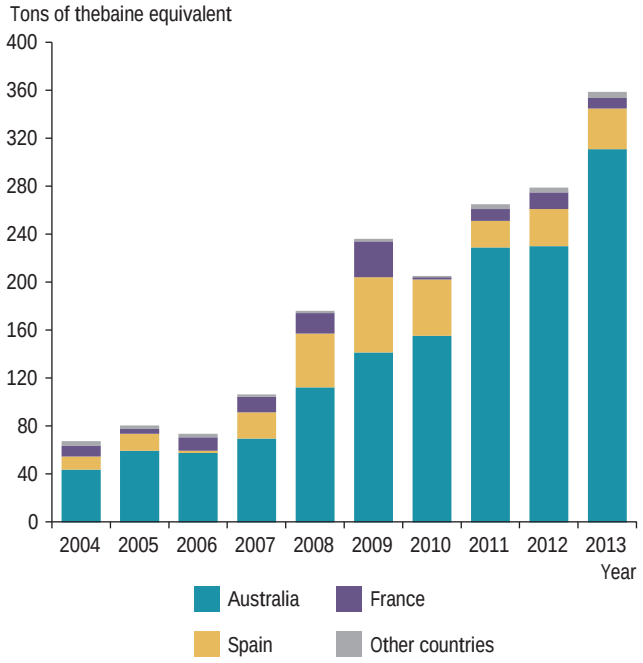


Figure 5. Poppy straw (T): production in thebaine equivalent, 2004-2013



significantly lower morphine content than poppy straw obtained from opium poppy plants cultivated for the production of alkaloids. In 2013, imports by Slovakia of poppy straw (M) from the Czech Republic decreased to 1,258 tons, from 1,587 tons in 2012 (expressed in gross weight).

16. In 2013, utilization of poppy straw (M) in the main user countries amounted to 27,070 tons in gross weight in Turkey, 9,186 tons in Australia, 7,420 tons in France and 5,361 tons in Spain. Further details on the utilization of poppy straw (M) for the extraction of alkaloids and the yields obtained are contained in table IV.

Poppy straw produced from opium poppy rich in thebaine (poppy straw (T))

17. Australia and France started to report the production of poppy straw (T) to INCB in 1999. Spain reported the production of poppy straw (T) for the first time in 2004. China and Hungary have reported sporadic production in recent years. More details on the production of poppy straw (T) can be found in table II.

18. Global production of poppy straw (T) expressed in thebaine equivalent during the period 2004-2013 is shown in figure 5. In 2013, total production amounted to about 360 tons in thebaine equivalent. Australia remained the leading producer of poppy straw (T) (312 tons expressed in thebaine equivalent, accounting for 86.6 per cent of global production), followed by Spain (34 tons, or 9.4 per cent) and France (9 tons, or 2.5 per cent).

19. All poppy straw (T) is used in the producing and manufacturing countries for the extraction of alkaloids. The quantities used, the alkaloids obtained from poppy straw (T) and the respective yields are shown in table V.

Poppy straw produced from opium poppy rich in codeine (poppy straw (C))

20. Australia reported the cultivation of poppy straw (C) for commercial purposes for the first time in 2009. France reported cultivation of opium poppy rich in codeine for the first time in 2013. This new variety was cultivated specifically to meet the high global demand for codeine. In 2010, 415 tons were produced; in 2011 and 2012, 1,390 tons were produced; and in 2013, production doubled to 2,804 tons, with Australia accounting for 71.6 per cent and France for 28.4 per cent of the total quantity produced.

Poppy straw used for decorative purposes

21. In some countries, the poppy plant is cultivated for culinary and decorative purposes. The main countries involved in this type of cultivation are Austria, the Czech Republic, Germany, the Netherlands, Poland and Ukraine.

Concentrate of poppy straw

22. Most countries using poppy straw for the extraction of alkaloids first manufacture an intermediate product called "concentrate of poppy straw", although in some countries morphine or thebaine is manufactured directly from poppy straw in a continuous process, which may involve a number of other intermediate products (for details, see tables IV and V). Until the second half of the 1990s, only concentrate of poppy straw containing morphine as the main alkaloid was manufactured. Since then, concentrate of poppy straw containing mainly thebaine, oripavine or codeine has started to be manufactured. Concentrate of poppy straw may contain a mixture of alkaloids, and more alkaloids than just the principal alkaloid may be extracted in industrial processes. The different types of concentrate of poppy straw are referred to by the main alkaloid contained in them.[10]

23. Since the actual content of alkaloids in concentrate of poppy straw may vary significantly, for purposes of comparison and for statistical purposes, all data referring to concentrate of poppy straw are expressed in terms of the quantity of the respective anhydrous alkaloid contained in the material. The quantities of anhydrous morphine alkaloid contained in concentrate of poppy straw are referred to as AMA (CPS), those of anhydrous thebaine alkaloid as ATA (CPS), those of anhydrous oripavine alkaloid as AOA (CPS) and those of anhydrous codeine alkaloid as ACA (CPS). The totals of all the individual alkaloids contained in concentrate of poppy straw are examined below, expressed in terms of 100 per cent of the respective anhydrous alkaloid content.[11]

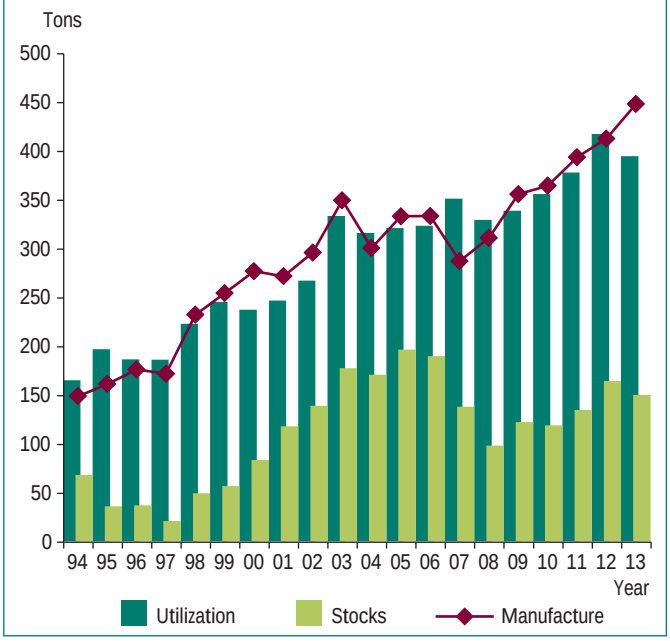
Anhydrous morphine alkaloid contained in concentrate of poppy straw (AMA (CPS))

24. AMA (CPS) continues to be the most important and most widely used of the alkaloids contained in concentrate of poppy straw. Figure 6 shows the trends in its manufacture, stocks and utilization during the period 1994-2013.

25. Global manufacture of AMA (CPS) has risen sharply since the 1990s and fluctuated considerably between 2001 and 2013, reaching its highest ever level (449 tons) in 2013. Trends in the manufacture of AMA (CPS) in the main manufacturing countries in the period 1994-2013 are presented in figure 7.

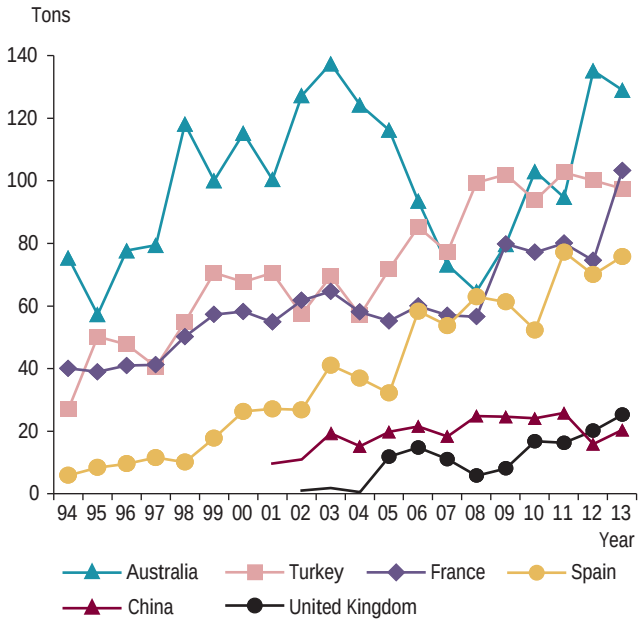
26. Over the past decade, Australia and Turkey have been the leading manufacturers of AMA (CPS). In 2013,

Figure 6. Anhydrous morphine alkaloid contained in concentrate of poppy straw: global manufacture, stocks[a] and utilization, 1994-2013



[a]Stocks as at 31 December of each year.

Figure 7. Anhydrous morphine alkaloid contained in concentrate of poppy straw: manufacture in the main manufacturing countries, 1994-2013



[10]Currently, the following types are traded: *(a)* concentrate of poppy straw containing morphine as the main alkaloid; *(b)* concentrate of poppy straw containing thebaine as the main alkaloid; *(c)* concentrate of poppy straw containing oripavine as the main alkaloid; and *(d)* concentrate of poppy straw containing codeine as the main alkaloid.

[11]The comments on concentrate of poppy straw in this publication are not directly comparable with comments on concentrate of poppy straw contained in editions of this publication prior to 2005, since at that time concentrate of poppy straw was expressed in terms of 50 per cent of the main alkaloid contained therein.

Figure 8. Anhydrous morphine alkaloid contained in concentrate of poppy straw: utilization for the manufacture of opiates, 1994-2013

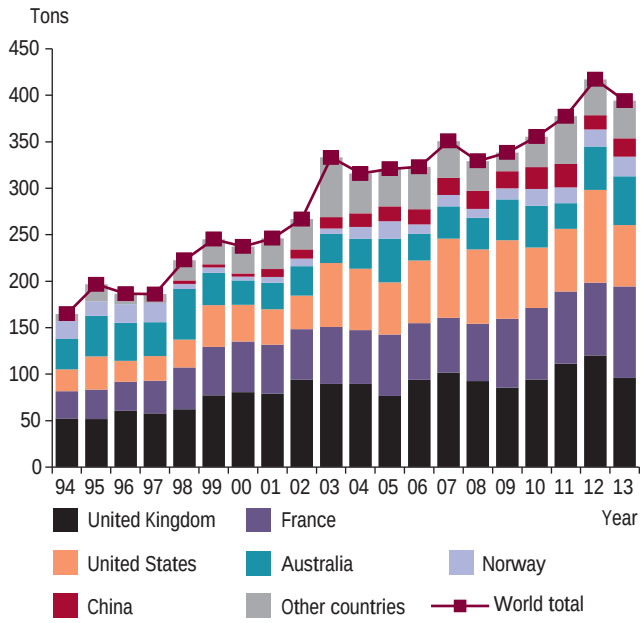
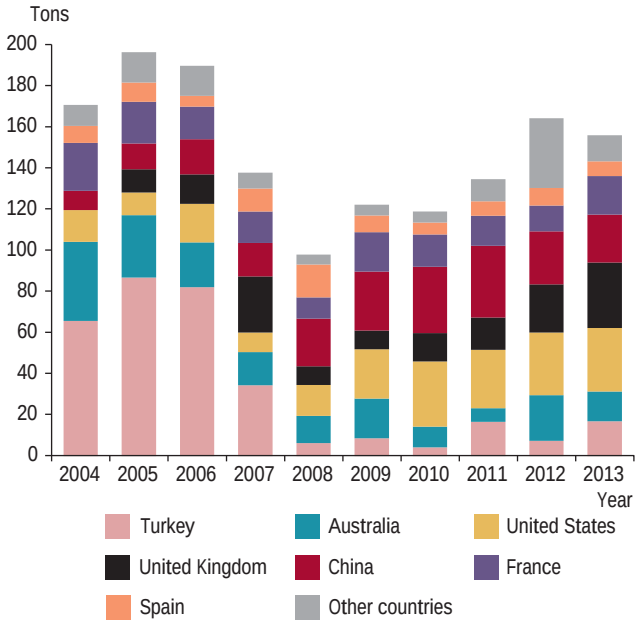


Figure 9. Anhydrous morphine alkaloid contained in concentrate of poppy straw: stocks,[a] 2004-2013



[a]Stocks as at 31 December of each year.

however, while Australia reported manufacturing 128.6 tons, or 28.7 per cent of global manufacture, the second biggest manufacturer was France, with 102.9 tons, or 22.9 per cent. Turkey was third, with 97 tons, or 21.6 per cent, and it was followed by Spain, with 75.4 tons, or 16.8 per cent. Other countries reporting manufacture of AMA (CPS) for 2013 were the United Kingdom, China and the former Yugoslav Republic of Macedonia.

27. Global exports of AMA (CPS) increased to 240 tons in 2003 and have fluctuated since then. In 2013, they amounted to 213 tons, a decrease from the level of 2012 (239 tons). Turkey remained the main exporting country in 2013 (with 78 tons, accounting for 36.7 per cent of global exports), followed by Australia (69.8 tons, or 33 per cent) and Spain (63.3 tons, or 29.8 per cent). The United Kingdom and the United States have been the leading importers of AMA (CPS) and together they accounted for 72 per cent of the world total in 2013. Other importing countries were, in descending order, Norway, France, South Africa, Switzerland, the former Yugoslav Republic of Macedonia, Japan and Italy. Further details on international trade in AMA (CPS) can be found in annex IV, tables 1 and 2.

28. AMA (CPS) is an intermediate product for the manufacture of morphine. It is also used in continuous manufacturing processes for the manufacture of codeine. Utilization of AMA (CPS) increased steadily until 2003 and has been fluctuating since then (see figure 8). In 2013, total world utilization amounted to 395 tons, less than in 2012 (418 tons). France, at 98.6 tons, accounted for 25 per cent of the global utilization of AMA (CPS), followed by the United Kingdom (96 tons, or 24.3 per cent), the United States (66.4 tons, or 16.8 per cent) and Australia (52.6 tons, or 13.3 per cent).

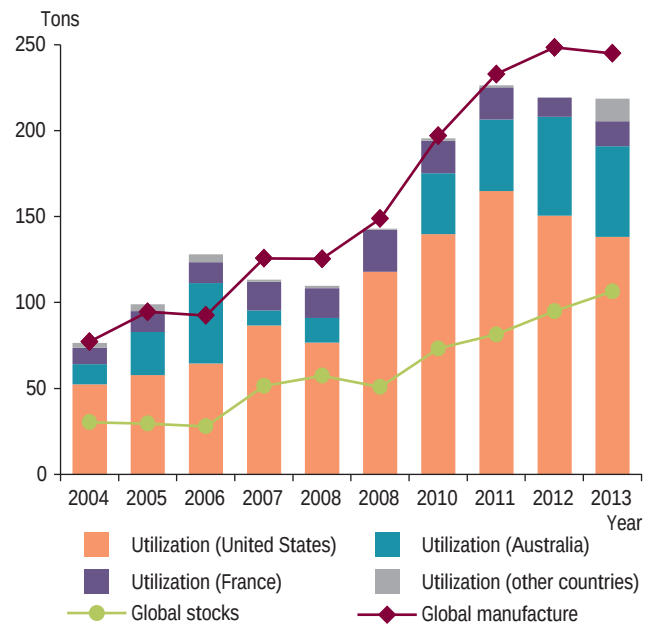
29. Global stocks of AMA (CPS) reached 156 tons in 2013 (see figure 9). The United Kingdom (32 tons) and the United States (31 tons) held the largest stocks in 2013, with 20 per cent and 19.8 per cent respectively, while China kept 23 tons, or 15 per cent of the global total.

Anhydrous thebaine alkaloid contained in concentrate of poppy straw (ATA (CPS))

30. Figure 10 provides an overview of the manufacture, stocks and utilization of ATA (CPS) during the period 2004-2013. Industrial manufacture of ATA (CPS) started in 1998 and has increased rapidly since then, stabilizing at 244.4 tons in 2013, which represented a decrease of 3.5 tons compared with the level in 2012. Australia, Spain, France, Belgium and China, in descending order, have been the only manufacturing countries, accounting for 84 per cent, 6 per cent, 5.9 per cent, 3.6 per cent and slightly less than 0.5 per cent, respectively, of the global total in 2013. Australia was the main exporter, accounting for 183 tons, or 89.6 per cent, of global exports in 2013. The United States has been the leading importer of ATA (CPS); in 2013 it accounted for 95 per cent of total imports.

31. ATA (CPS) is an intermediate product for the manufacture of thebaine. Global utilization of ATA (CPS) increased sharply from 22 tons in 2000 to 217 tons in 2013, slightly

Figure 10. Anhydrous thebaine alkaloid contained in concentrate of poppy straw: utilization, global manufacture and stocks,[a] 2004-2013



[a]Stocks as at 31 December of each year.

less than the level of the previous year, which was 218 tons. This reflects the growing demand for thebaine and the substances that may be obtained from it. The United States continued to be the main user in 2013 (accounting for 63 per cent of global utilization), followed by Australia (24 per cent) and France (6 per cent). Global stocks of ATA (CPS) stood at 106 tons in 2013. The United States (68 tons) and Australia (28 tons) accounted for 91 per cent of global stocks.

Anhydrous oripavine alkaloid contained in concentrate of poppy straw (AOA (CPS))

32. Manufacture of AOA (CPS) in commercially usable quantities started in 1999. Australia was the main manufacturing country in 2013, with almost 100 per cent of the world total of 63 tons. Spain manufactured a minimal quantity of 2 kg. Total utilization of AOA (CPS) in 2013 amounted to 44.3 tons. AOA (CPS) has been used in Switzerland (47.5 per cent), the United States (46.3 per cent) and Australia (6.2 per cent) for the manufacture of other drugs. Global stocks of AOA (CPS) have been fluctuating since 2001. In 2013, they stood at 16.1 tons, of which 52 per cent was held in the United States and 48 per cent in Australia.

Anhydrous codeine alkaloid contained in concentrate of poppy straw (ACA (CPS))

33. Manufacture of ACA (CPS) amounted to 29 tons in 2013. Australia, France, Turkey, Belgium and Spain were the only countries that manufactured ACA (CPS), accounting, respectively, for 53 per cent, 25 per cent, 16 per cent, 5 per cent and 1 per cent of the global total in 2013. ACA (CPS) is used for the extraction of codeine. Global utilization of ACA (CPS) amounted to 24.6 tons in 2013, of which 36.1 per cent was accounted for by France, 31 per cent by the United States and 27 per cent by the United Kingdom. Global stocks of ACA (CPS) in 2013 stood at 9.2 tons, most of which was held in the United States (3.3 tons) and Australia (3.2 tons).

Opiates and opioids

34. "Opiate" is the term generally used to designate drugs derived from opium and their chemically related derivatives, such as the semi-synthetic alkaloids, while "opioid" is a more general term for both natural and synthetic drugs with morphine-like properties, although the chemical structure may differ from that of morphine.[12]

35. Opioids are used mostly for their analgesic properties to treat severe pain (fentanyl, hydromorphone, methadone, morphine and pethidine), moderate to severe pain (buprenorphine[13] and oxycodone) and mild to moderate pain (codeine, dihydrocodeine and dextropropoxyphene), as well as to induce or supplement anaesthesia (fentanyl and fentanyl analogues such as alfentanil and remifentanil). They are also used as cough suppressants (codeine, dihydrocodeine and, to a lesser extent, pholcodine and ethylmorphine), to treat gastrointestinal disorders, mainly diarrhoea (codeine and diphenoxylate) and to treat addiction to opioids (buprenorphine and methadone).

Natural alkaloids

36. Morphine, codeine, thebaine, noscapine, oripavine, papaverine and narceine are alkaloids contained in opium or poppy straw. Morphine and codeine are under international control because of their potential for abuse, while thebaine and oripavine are under such control because of their convertibility into opioids subject to abuse.

[12]From a clinical point of view, opioids may be classified according to their actions compared with those of morphine: similar affinity (agonist), competitive (antagonist) or mixed (agonist/antagonist) for the same receptor sites (the so-called opioid receptors) in the central and peripheral nervous system.

[13]Buprenorphine is controlled under the Convention on Psychotropic Substances of 1971. Comments on its licit movement are contained in para. [...] below.

Noscapine, papaverine and narceine are not under international control. Morphine is the prototype of natural opiates and many opioids and, because of its strong analgesic potency, it is used as a reference parameter for comparative purposes.

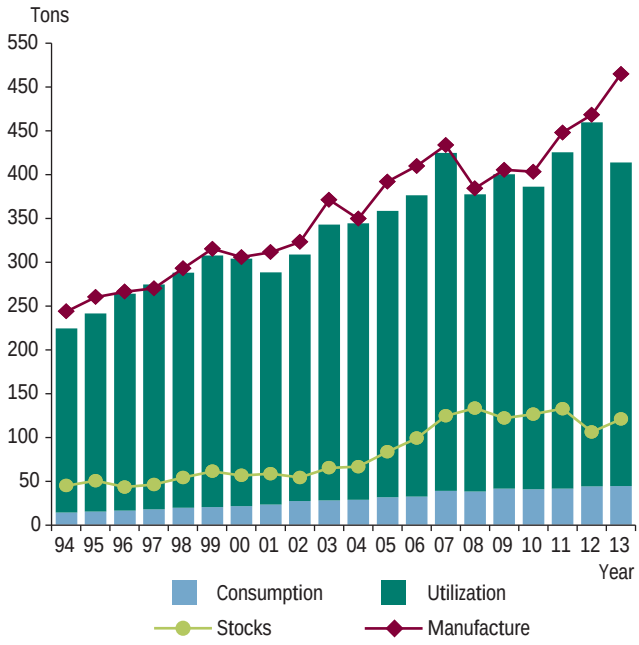
Morphine

37. Figure 11 presents data on the manufacture,[14] stocks, consumption and utilization of morphine during the period 1994-2013. Global manufacture of morphine doubled during the 20-year period, increasing from about 247.1 tons in 1994 to 522.6 tons in 2013, which was a further increase from the 475.3 tons recorded in 2012. Around 70 per cent of the morphine manufactured globally is converted into other narcotic drugs or into substances not covered by the 1961 Convention (see paras. 42-44 below). The rest is used for medical purposes.

38. In 2013, the leading morphine manufacturing country was France (93.5 tons, or 17.9 per cent of global manufacture), followed by the United Kingdom (88.5 tons—a decrease from 110 tons in 2012—or 17 per cent), the United States (88.2 tons, or 16.9 per cent), Spain (76 tons, or 14.6 per cent), Australia (54.6 tons, or 10.4 per cent), Norway (20.8 tons, or 4 per cent), China (18.8 tons, or 3.6 per cent) and Japan (15.1 tons, or 2.9 per cent). Together, these eight countries accounted for 87.3 per cent of global manufacture. Four other countries reported the manufacture of morphine in 2013 in quantities of more than 10 tons: Iran (Islamic Republic of) (13.7 tons), India (11 tons),[15] Hungary (10.6 tons) and South Africa (10.4 tons).

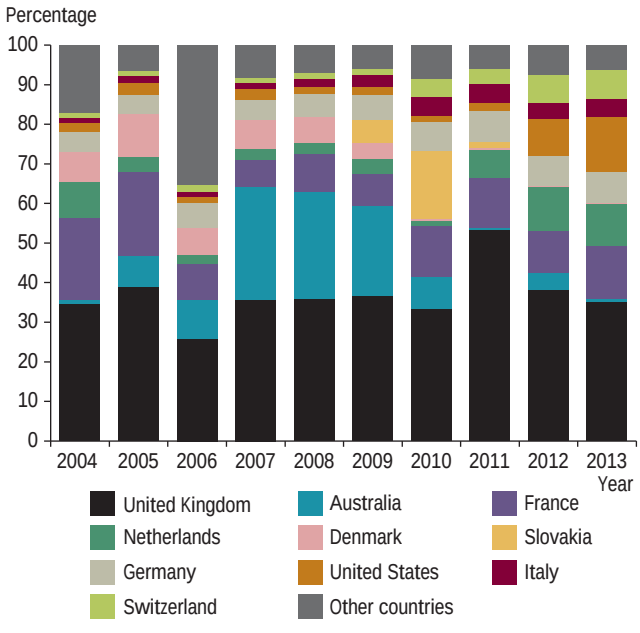
39. Exports of morphine amounted to 26 tons in 2013, a slight decrease of 0.5 tons from 2012. The leading exporting country continued to be the United Kingdom (35.2 per cent of global exports), followed by the United States (14 per cent), France (13.5 per cent) and the Netherlands (10 per cent) (see figure 12). Several countries imported more than 1 ton of morphine in 2013: the United Kingdom, despite being a major exporter of it, imported 4.1 tons, followed by Germany (3.9 tons), the Netherlands (3 tons), Austria (2.2 tons), Australia (2 tons), Canada (1.7 tons) and Brazil (1.2 tons). Further details on exports and imports of morphine can be found in annex IV, tables 3 and 4.

Figure 11. Morphine: global manufacture, stocks,[a] consumption and utilization, 1994-2013



[a]Stocks as at 31 December of each year.

Figure 12. Morphine: export shares, 2004-2013

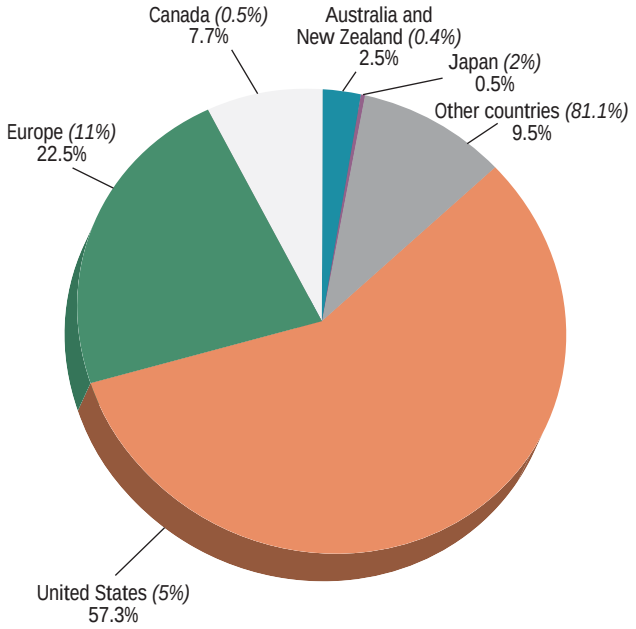


40. Global consumption of morphine, excluding preparations included in Schedule III of the 1961 Convention, increased considerably between 1994 (13.9 tons) and 2013 (44.7 tons, or 447 million S-DDD). The differences in consumption levels between countries continued to be very significant (see figure 13 and table XIV), owing to various economic, knowledge, regulatory and other factors influencing the use of morphine in the treatment of pain.

[14]In Australia, Brazil, China, Iran (Islamic Republic of), Italy, Norway, Portugal, Turkey and the United Kingdom, concentrate of poppy straw is used in continuous industrial processes for the manufacture of other narcotic drugs, without first separating morphine. For statistical and comparative purposes, the theoretical quantity of morphine involved in such conversions is calculated by INCB and included in the present publication in the statistics on global manufacture and utilization of morphine.

[15]The figures for India were calculated by INCB using available data series and they are being clarified with the Government.

Figure 13. Morphine: distribution of consumption, 2013



Note: Percentages in parentheses refer to share of the world population (i.e. total population of all reporting countries).

41. As in past years, the consumption of morphine, excluding preparations included in Schedule III of the 1961 Convention, continued to be concentrated (by over two thirds) in a small number of countries located mainly in Western Europe and North America. Among these, in 2013 the United States was the country with the highest consumption of morphine (25.5 tons, or 57.3 per cent of global consumption), followed by Canada (3.4 tons, or 7.7 per cent), the United Kingdom (2.1 tons, or 4.7 per cent), France (2 tons, or 4.6 per cent), Austria (1.7 tons, or 3.7 per cent), China (1.6 tons, or 3.7 per cent) and Germany and Italy (both with 1.2 tons, or 2.8 per cent). On the basis of S-DDD consumed per million inhabitants per day, the country with the highest consumption was Austria (5,614 S-DDD), where morphine is used for the treatment of pain and in substitution treatment for opioid addiction. In seven other countries, morphine consumption was over 1,000 S-DDD per million inhabitants per day in 2013: Canada (2,738 S-DDD), Denmark (2,376 S-DDD), the United States (2,238 S-DDD), New Zealand (1,578 S-DDD), Switzerland (1,210 S-DDD), Australia (1,059 S-DDD) and the United Kingdom (926 S-DDD). A large part of the world population (81 per cent) has just 9.5 per cent of the amount of morphine available globally at its disposal to manage pain and suffering. The disparity in consumption of narcotic drugs for palliative care continues to be a matter of concern.

42. In some countries, morphine is used for the manufacture of preparations included in Schedule III of the 1961 Convention. In 2013, countries using morphine for that purpose in significant quantities were China, which reported the use of 7.5 tons of morphine for the manufacture of such preparations, and Italy (919 kg).

43. The largest share of morphine is used for conversion into other opiates, such as codeine, ethylmorphine and pholcodine (see table VI). The amounts utilized for that purpose, which fluctuated at about 200 tons per year until the beginning of the 1990s, have increased steadily since then, reaching 374 tons in 2013. Of the quantity utilized in 2013, 94 per cent was converted into codeine. The seven main countries reporting conversion of morphine into codeine in 2013 were the United Kingdom (68 tons), France (59 tons), Australia (50 tons), the United States (36 tons), Norway (19 tons), Japan (12 tons) and the Islamic Republic of Iran (11 tons).

44. Morphine is also used for the manufacture of substances not controlled under the 1961 Convention, such as noroxymorphone, nalorphine and naloxone. The quantity of morphine utilized for that purpose has fluctuated considerably in the past two decades, amounting to 1,689 kg in 2013, of which 1,291.5 kg was used by the United States and 397.5 kg by France.

45. Global stocks of morphine stood at 122 tons in 2013, an increase from the 107 tons of stocks in 2012 but not reaching the level of 134 tons reported in 2011. The largest stocks were held by the United States (55.9 tons, or 45.8 per cent of global stocks), France (11.7 tons, or 9.6 per cent), Hungary (8.7 tons, or 7.1 per cent) and the United Kingdom (7.9 tons, or 6.5 per cent).

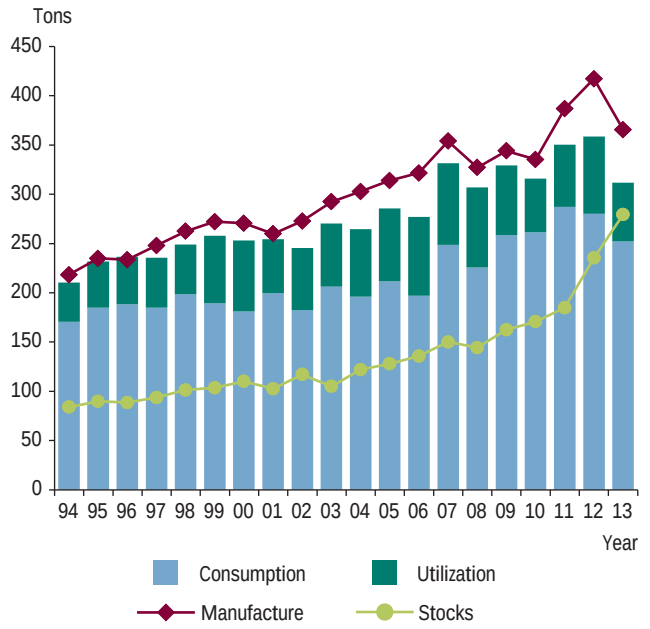
Codeine

46. Codeine is a natural alkaloid of the opium poppy plant, but most of the codeine currently being manufactured is obtained from morphine through a semi-synthetic process. As reported above, there has been an increase in the cultivation of the opium poppy variety that is rich in codeine and in the manufacture of ACA (CPS), which is used for the extraction of codeine. Global utilization of ACA (CPS) amounted to 24.6 tons in 2013, which is a fraction of the amount of morphine used. Codeine is used mainly for the manufacture of preparations in Schedule III of the 1961 Convention, while a smaller quantity is used for the manufacture of other narcotic drugs, such as dihydrocodeine and hydrocodone. The trends in global manufacture, consumption, utilization and stocks of codeine during the period 1994-2013 are shown in figure 14.

47. Global manufacture of codeine reached a peak of 414 tons in 2012 and decreased to 361 tons in 2013 (the third highest level ever).

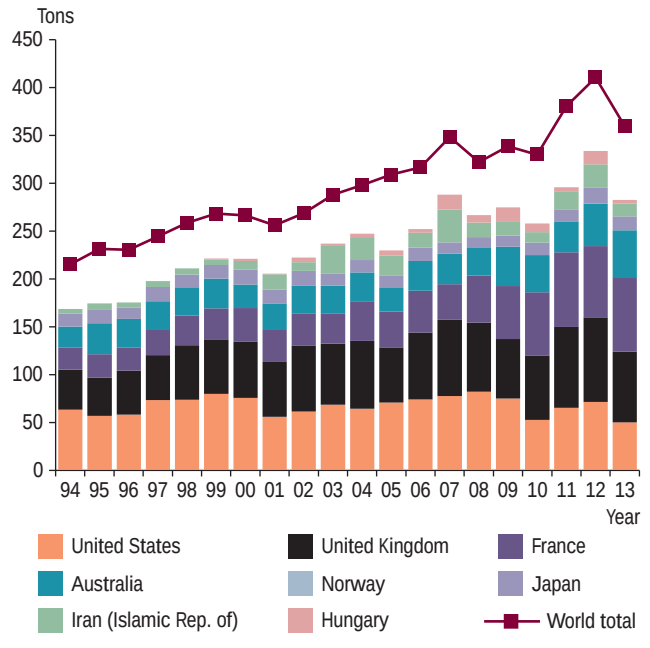
48. The main manufacturing country was France (77.4 tons, or 21.4 per cent of global manufacture) followed by the United Kingdom (74.4 tons, or 20.6 per cent), Australia (50 tons, or 13.9 per cent) and the United States (49.3 tons, or 13.7 per cent) (see figure 15).

Figure 14. Codeine: global manufacture, stocks,[a] consumption and utilization, 1994-2013



[a]Stocks as at 31 December of each year.

Figure 15. Codeine: manufacture, 1994-2013



49. Despite the drop in manufacture, stocks available globally continued to increase, reaching 275.9 tons. The countries keeping significant quantities of codeine in stock were India (49.6 tons, or 18 per cent), the United Kingdom (43.9 tons, or 15.9 per cent), the United States (35.3 tons, or 12.8 per cent), Australia (31.7 tons, or 11.5 per cent) and France (23.6 tons, or 8.5 per cent).

50. World exports of codeine mirrored the manufacturing trend in 2013 and dropped to 160.4 tons, after the highest level ever reported of 176.4 tons in 2012 (see figure 16). France remained the leading exporting country of codeine in 2013, even though the overall global total diminished, and increased the quantity it exported to 52.1 tons, accounting for 26 per cent of the global total, followed by Australia (29.8 tons, or 18.6 per cent), the United Kingdom (23.7 tons, or 14.8 per cent), Norway (17.2 tons, or 10.7 per cent) and Switzerland (8.5 tons, or 5.32 per cent).

51. The main importing countries of codeine in 2013 were India (41.8 tons), Canada (19.3 tons), Germany (12.3 tons), Switzerland (11.3 tons), Viet Nam[16] (10 tons) and Italy (9.2 tons). More details on the international trade in codeine can be found in annex IV, tables 3 and 4.

52. Codeine is used mainly in the form of preparations listed in Schedule III of the 1961 Convention. In 2013, preparations listed in Schedule III accounted for 98.6 per cent of the total consumption of codeine. The consumption of codeine grew from 168 tons in 1994 to 248.9 tons in 2013 (see figure 14), making it the second most widely used opiate in medical practice globally in terms of S-DDD (2.4 billion S-DDD). It should be noted that countries reporting the utilization of codeine for the manufacture of preparations listed in Schedule III are not necessarily the countries of consumption of those preparations. Large quantities of those preparations are exported from some of those countries.

53. Codeine is consumed almost exclusively (98.6 per cent) in the form of preparations listed in Schedule III. In 2013, the main countries reporting consumption were India (45 tons), the United Kingdom (32.4 tons), France (23.7 tons), Canada (22.9 tons), the Islamic Republic of Iran (13.3 tons) and the United States (11.5 tons), which together accounted for 60 per cent of global use in 2013. Other major user countries were, in descending order of quantity used, Viet Nam, China, Germany, Spain, Hungary, Australia and South Africa (see figure 17).

54. Utilization of codeine for the manufacture of other narcotic drugs, mainly dihydrocodeine and hydrocodone, increased steadily until reaching its highest level in 2007 (81.8 tons). Utilization stood at 58.8 tons in 2013. Of the amount reported for 2013, 26.5 tons were used in the United States, 12.6 tons in Japan and 6 tons in the United Kingdom. Other major user countries were, in descending order of quantity used, Italy, Belgium, Slovakia and Hungary.

[16]The figures for Viet Nam were calculated by INCB using available data series and they are being clarified with the Government.

55. Global stocks of codeine amounted to 275.9 tons in 2013. About 57 per cent of global stocks was held by four countries: India (49.6 tons), the United Kingdom (43.9 tons), the United States (35.3 tons) and Australia (31.7 tons). There were 16 other countries and territories that held stocks of codeine in quantities of more than 1 ton. These were, in descending order of quantity of stocks, France, Canada, Spain, Japan, Hungary, Norway, Switzerland, South Africa, Italy, China, Slovakia, Brazil, Germany, Turkey, Hong Kong Special Administrative Region of China and Viet Nam.

Figure 16. Codeine: exports, 1994-2013

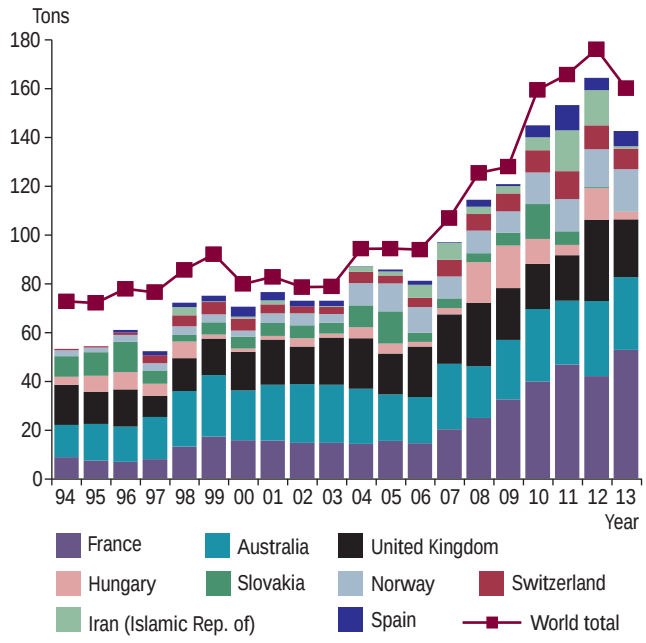
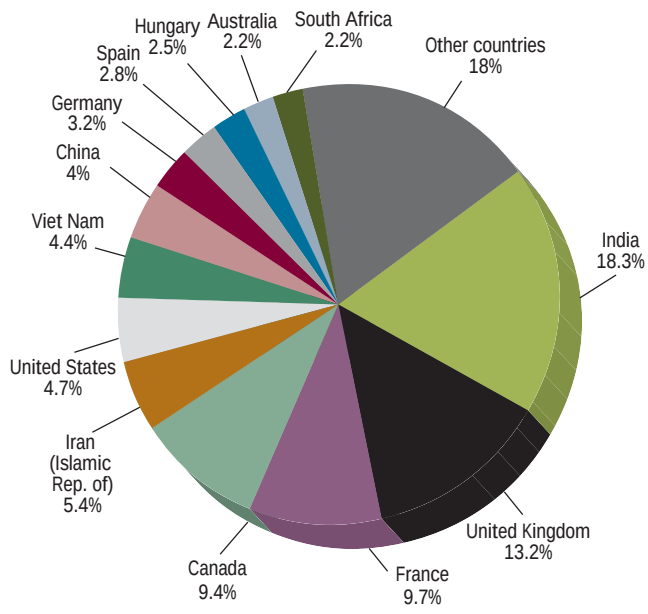


Figure 17. Codeine: utilization for the manufacture of preparations listed in Schedule III of the 1961 Convention, 2013



Thebaine

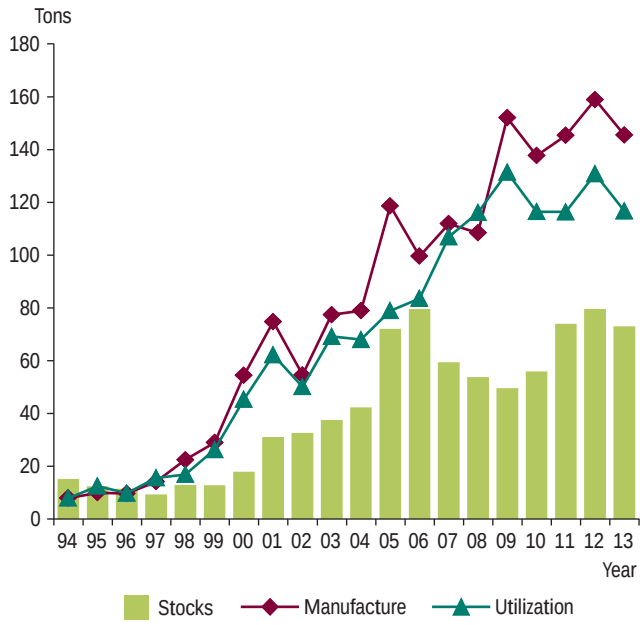
56. Until the 1990s, thebaine was manufactured mainly from opium; since 1999, it has been obtained primarily from poppy straw. Thebaine may also be obtained through the conversion of oripavine or from semi-synthetic opioids, such as hydrocodone. Thebaine itself is not used in therapy, but it is an important starting material for the manufacture of a number of opioids, mainly codeine, dihydrocodeine, etorphine, hydrocodone, oxycodone and oxymorphone (all of which are substances controlled under the 1961 Convention) and buprenorphine (which is a substance controlled under the Convention on Psychotropic Substances of 1971),[17] as well as of substances not under international control, such as the derivatives naloxone, naltrexone, nalorphine and nalbuphine.

57. Global manufacture of thebaine has increased sharply since the late 1990s, as a consequence of the growing demand for oxycodone and other drugs and substances that may be derived from it. In 2013, global manufacture dropped to 146 tons (almost the 2011 level) from the peak of 158 tons reached in 2012 (see figure 18). However, this seems to be a temporary adjustment to a trend of continuous increase that is expected to continue, since the medicines derived from thebaine continue to be in high demand, despite restrictions on prescription drugs recently introduced in the main market (the United States) because of the abuse of these drugs and the high number of overdose deaths they have caused. The United States continued to be the leading manufacturing country, accounting for 68.9 tons, or 47.4 per cent of global manufacture, in 2013. The other major manufacturers of thebaine were Australia (29 tons, or 20 per cent) and Spain (28 tons, or 19 per cent). Global exports of thebaine decreased to 47 tons in 2013, compared with 67 tons in 2012. Australia and Spain remained the main exporting countries in 2013, together accounting for 85.8 per cent of the world total. The main importing country of thebaine was the United Kingdom (25.9 tons).

58. Utilization of thebaine for the manufacture of other narcotic drugs reached 97.6 tons in 2013 (see figure 19 and table VII). The United States was the main user country of thebaine during the 20-year period 1994-2013. In 2013, the United States accounted for 51.8 per cent of global use, followed by the United Kingdom, which accounted for 22.1 per cent. The quantity of thebaine reported as used for the manufacture of substances not covered under the 1961 Convention (mainly buprenorphine) fluctuated during the 10-year period 2004-2013: in 2013, it amounted to 18.8 tons, an increase from the 12.3 tons of the previous year. Switzerland, Germany, the United Kingdom and the United States together accounted for 82 per cent of the world total.

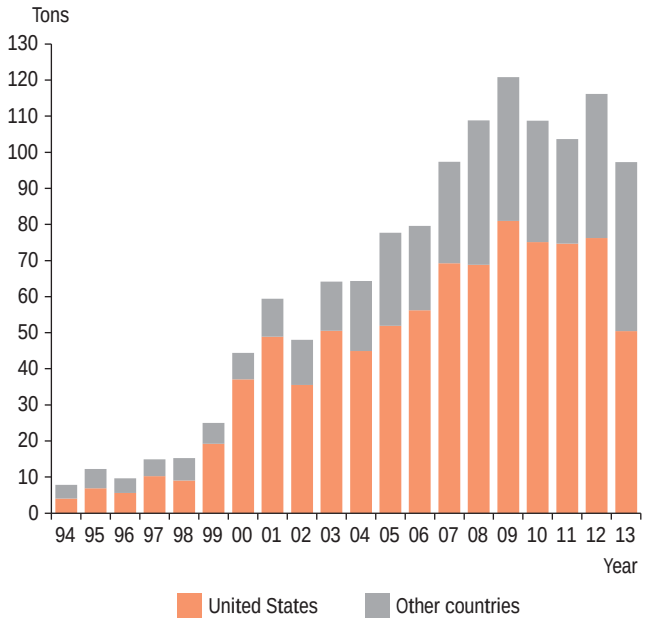
[17] United Nations, *Treaty Series*, vol. 1019, No. 14956.

Figure 18. Thebaine: global manufacture, utilization and stocks,[a] 1994-2013



[a]Stocks as at 31 December of each year.

Figure 19. Thebaine: utilization for the manufacture of opioids, 1994-2013



59. Global stocks of thebaine stood at 72.9 tons in 2013. Major stocks were held in the United States (58 tons), Switzerland (10 tons), the United Kingdom (7 tons) and Japan and Australia (both with 4 tons).

Oripavine

60. In 2007, oripavine was included in Schedule I of the 1961 Convention. The only countries reporting significant manufacture of oripavine in 2013 were the United States (14.9 tons), Australia (2.7 tons) and Switzerland (0.8 tons). The use of oripavine in significant quantities for the manufacture of other drugs was reported in 2013 by the United States (13.7 tons for buprenorphine, a controlled substance under the 1971 Convention) and Switzerland (0.2 tons, mainly for hydromorphone). In 2013, global stocks of oripavine amounted to 4.9 tons, of which 82 per cent was held in the United States.

Semi-synthetic opioids

61. Semi-synthetic opioids are made by relatively simple chemical modifications of natural opiates, such as morphine, codeine and thebaine. Some examples of these derivatives are dihydrocodeine, ethylmorphine, heroin, hydrocodone, oxycodone and pholcodine. It should be noted that losses[18] have been reported as occurring during the processing of some semi-synthetic opioids by some of the major manufacturers. These large manufacturing losses account for the difference between the total quantities of hydrocodone and oxycodone manufactured and those consumed, which are reflected in figures 22 and 23 (see page 36).

Dihydrocodeine

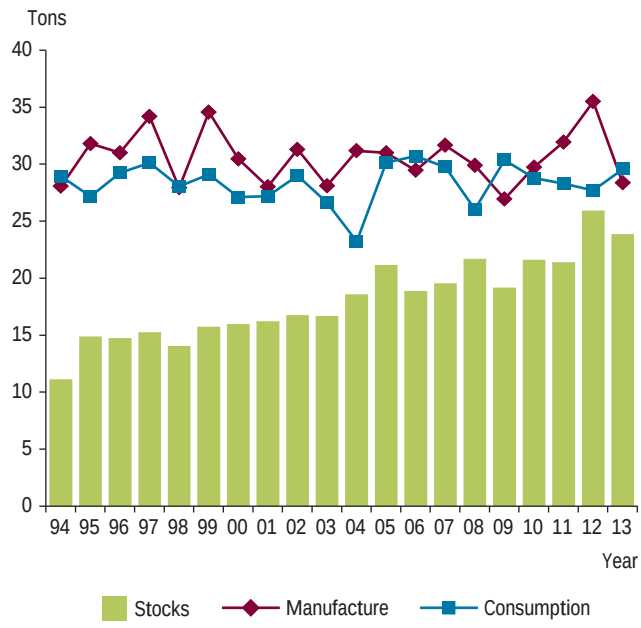
62. Global manufacture of dihydrocodeine has been fluctuating between 28 and 35 tons in the past 20 years. In 2013, the quantity manufactured worldwide stood at 28.6 tons (see figure 20). The main countries manufacturing significant quantities continued to be Japan (13.2 tons), the United Kingdom (6 tons) and Italy (5.1 tons), together accounting for 86 per cent of total world dihydrocodeine manufacture in 2013. Global exports of dihydrocodeine amounted to 12 tons in 2013. The main exporting country remained Italy, accounting for almost 40 per cent of world exports, followed by France, the United Kingdom and Belgium. The United Kingdom also remained the leading importing country of dihydrocodeine in 2013 (4.2 tons); other main importers were France (2.3 tons), the Republic of Korea (2.1 tons) and India (1 ton).

63. Dihydrocodeine is consumed mainly in the form of preparations included in Schedule III of the 1961 Convention, accounting for 92 per cent of total consumption. In 2013, use of dihydrocodeine reached 29.8 tons (about 290 million S-DDD). The main user countries of dihydrocodeine, in descending order, were Japan, the United

[18]Manufacturing losses are those occurring: *(a)* during the process of refining a drug; *(b)* during the process of transformation of a drug into its salts, isomers, esters and ethers, as applicable according to the Schedules; and *(c)* during the manufacture of preparations other than those included in Schedule III. They may also be due to the chemical decomposition of a drug, leakage, evaporation, quality requirements or accidents.

Kingdom and the Republic of Korea, together accounting for 88.8 per cent of total global utilization. In 2013, global stocks of dihydrocodeine amounted to 24.1 tons; major stocks were held in Japan (10.7 tons) and the United Kingdom (4.9 tons).

Figure 20. Dihydrocodeine: global manufacture, consumption and stocks,[a] 1994-2013



[a]Stocks as at 31 December of each year.

Ethylmorphine

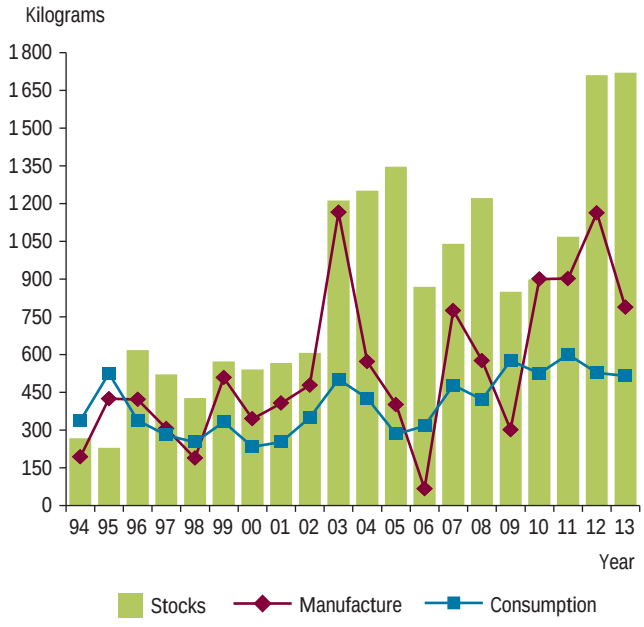
64. Global manufacture of ethylmorphine has followed a downward trend in the past 20 years, decreasing from 3.1 tons in 1994 to 1.7 tons in 2013. France, India and Hungary, the main manufacturing countries in 2013, accounted for 76.6, 12.3 and 9.1 per cent of global manufacture, respectively. France, at 549 kg, continued to be the leading exporting country, accounting for 80 per cent of global exports. The two largest importers in 2013, Sweden and Belgium, imported 305.1 kg and 168.9 kg of ethylmorphine, respectively. Ethylmorphine is consumed mainly in the form of preparations listed in Schedule III of the 1961 Convention (about 83 per cent of total consumption). Global utilization reached 1.4 tons in 2013 (28.8 million S-DDD). The main user countries in 2013 were Sweden (29 per cent of the world total) and France (20.2 per cent). In 2013, global stocks of ethylmorphine totalled 1 ton; the largest holder of stocks was France (56.1 per cent of global stocks).

Heroin

65. Between 1994 and 2002, global licit manufacture of heroin fluctuated between 193 kg and 477 kg. In 2003, it increased sharply to 1.2 tons, the largest amount ever reported. After 2003, manufacture declined and fluctuated, reflecting the changes in the manufacture reported by Switzerland and the United Kingdom. After an increase to 1.16 tons (see figure 21) in 2012, the manufacture of heroin decreased again to 785.8 kg in 2013. In 2013, the United Kingdom continued to be the main country exporting heroin (411 kg, or 72 per cent of global exports). Other exporters of heroin in amounts exceeding 10 kg were Switzerland (137 kg) and Hungary (10.6 kg). In 2013, the main importing country was the Netherlands (209.3 kg), followed by Switzerland (182.7 kg), Germany (77 kg), Denmark (48 kg) and the United Kingdom (28 kg).

66. Global consumption of heroin amounted to 513 kg in 2013. Switzerland, where heroin is prescribed for long-term opiate addicts, reported consumption of 242 kg in 2013. Other countries with significant heroin consumption in 2013 were the Netherlands (137 kg), Germany (75 kg), Denmark (30 kg) and Canada (10 kg). In the United Kingdom, consumption was considerably lower in 2013 (7.8 kg) than in 2012 (48 kg). In 2013, global stocks of heroin remained stable at 1.7 tons after the considerable increase that had occurred in 2012. The countries holding significant stocks in 2013 were Switzerland (803 kg), the United Kingdom (547 kg) and the Netherlands (259 kg).

Figure 21. Heroin: global manufacture, consumption and stocks,[a] 1994-2013



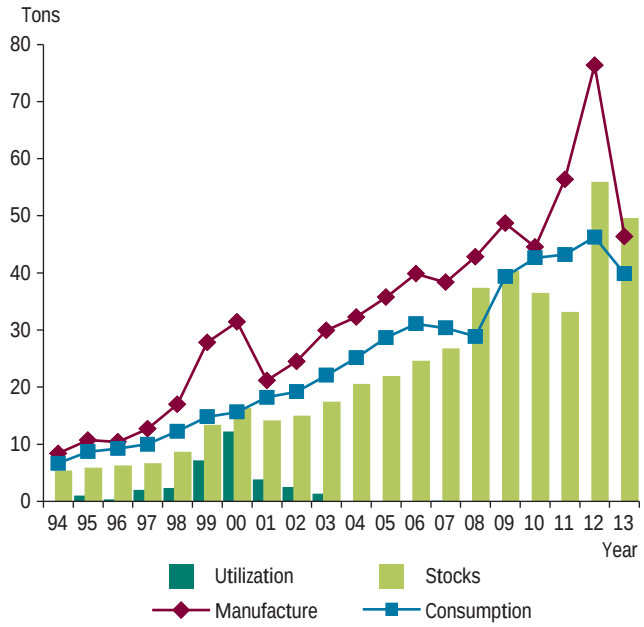
[a]Stocks as at 31 December of each year.

Hydrocodone

67. Global manufacture of hydrocodone has been increasing in the past 20 years, reaching a peak of 75.9 tons in 2012

but falling to 46.1 tons in 2013 (see figure 22), with the United States accounting for 100 per cent of global manufacture. The situation regarding hydrocodone may change in 2014 in view of plans in the United States to strengthen control over hydrocodone products and in view of the approval by the United States Food and Drug Administration of the first pure hydrocodone product. Concern has been expressed over the potential for abuse of that product.

Figure 22. Hydrocodone: global manufacture, consumption, utilization[a] and stocks,[b,c] 1994-2013



[a]Utilization for the manufacture of other drugs.
[b]Stocks as at 31 December of each year.
[c]Hydrocodone is subject to losses during the manufacturing process. This explains some gaps between manufacture and consumption/stocks.

68. Global consumption of hydrocodone stood at 39.6 tons in 2013, amounting to about 26 billion S-DDD. The country with the highest consumption of hydrocodone in 2013 was the United States, with 23,069 S-DDD consumed per million inhabitants per day, equivalent to 99 per cent of total global consumption. The high consumption in the United States makes hydrocodone the most used narcotic drug in medical practice in terms of S-DDD. In the past, hydrocodone had been used in the United States for the manufacture of thebaine for the purpose of manufacturing other narcotic drugs; no such use was reported after 2003, as extraction of thebaine from poppy straw had increased since the late 1990s and replaced the use of hydrocodone in the manufacture of thebaine. In 2013, global stocks of hydrocodone accounted for 49 tons, more than 99 per cent of which was held by the United States.

Hydromorphone

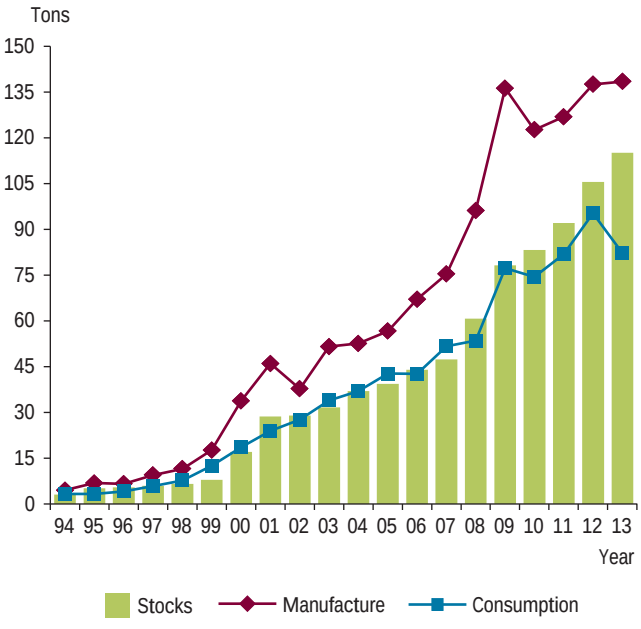
69. Global manufacture of hydromorphone has increased sharply over recent years, reaching 6.8 tons in 2013, the highest level ever registered. The United States and the United Kingdom were the leading manufacturing countries in 2013, accounting for 81 per cent and 10 per cent of global manufacture, respectively. Total exports of hydromorphone have risen steadily, reaching 3.2 tons in 2013. The leading exporting countries were the United States (37 per cent of world exports) and the United Kingdom (31 per cent). Canada remained the main importing country (1.1 tons) in 2013, followed by Germany (586 kg) and Italy (256 kg).

70. Global consumption of hydromorphone increased steadily, reaching 4.1 tons (208 million S-DDD) in 2013. The United States remained the main consumer country in 2013 (51 per cent of global consumption), followed by Canada (23 per cent) and Germany (11 per cent). Ranked according to S-DDD consumed per million inhabitants per day, the countries with the highest consumption of hydromorphone in 2013 were Denmark (4,569 S-DDD) and Canada (3,882 S-DDD). Global stocks of hydromorphone reached 7 tons in 2013, of which 67 per cent was held in the United States, 9 per cent in Canada and 4 per cent in Switzerland.

Oxycodone

71. Oxycodone is one of the drugs commonly associated with overdose deaths in relation to prescription drug abuse, in particular in North America. Global manufacture of oxycodone has increased sharply over recent years, reaching a record 138 tons in 2013 (see figure 23). In 2013, the

Figure 23. Oxycodone: global manufacture, consumption and stocks,[a,b] 1994-2013



[a]Stocks as at 31 December of each year.
[b]Oxycodone is subject to losses during the manufacturing process. This explains some gaps between manufacture and consumption/stocks.

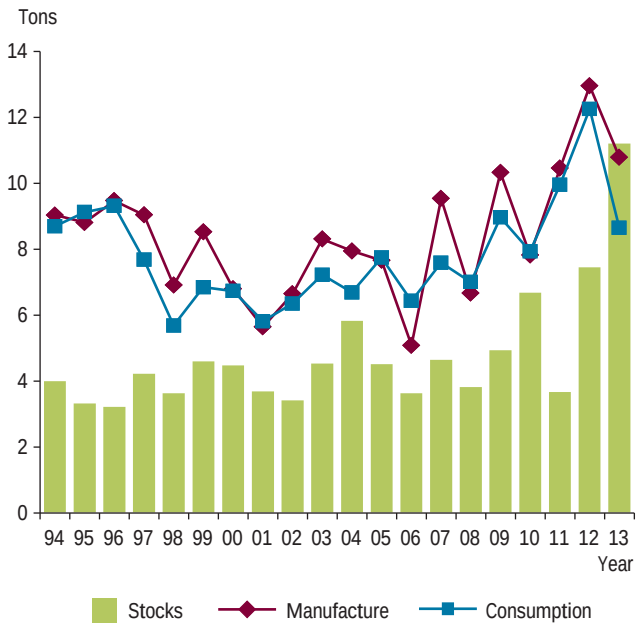
United States accounted for 74 per cent of total world manufacture, followed by France (12 per cent), the United Kingdom (10 per cent) and Hungary (2 per cent). Total exports of oxycodone have risen steadily in the past few years and stood at 26 tons in 2013, a small decrease from 2012 (28 tons). The United Kingdom continued to be the main exporting country in 2013 (51 per cent of world exports), followed by the Netherlands (12 per cent), the United States (11 per cent) and France (8 per cent). Canada (16 per cent), Germany (14 per cent), the Netherlands (13 per cent) and the United Kingdom (12 per cent) were the major importers of oxycodone in 2013. Further details on exports and imports of oxycodone are contained in annex IV, tables 3 and 4.

72. Global consumption of oxycodone dropped slightly to 82 tons (1 billion S-DDD) after several years of continuous increase. The United States, which continued to be the principal consumer country of oxycodone, accounted for 78 per cent of the world total. Other major consumer countries in 2013 were Canada (4.9 per cent), Germany (3.5 per cent) and Australia (3 per cent). Ranked according to S-DDD consumed per million inhabitants per day, the countries with the highest consumption of oxycodone in 2013 were the United States (7,445 S-DDD), Canada (4,297 S-DDD) and Australia (3,935 S-DDD). Global stocks of oxycodone increased to 114 tons in 2013—the highest level ever recorded—with the United States accounting for 78 per cent of the world total.

Pholcodine

73. Pholcodine manufacture and consumption have been fluctuating in the past few years and there was a drop in its manufacture from 12 tons in 2012 to 10.8 tons in 2013 (see figure 24). The reason for these fluctuations may be related to the concerns about its use putting people at risk of developing anaphylactic (severe allergic) reactions to neuromuscular blocking agents used during surgery. These concerns led to its withdrawal from the market in some countries. However, a review in 2012 by the European Medicines Agency concluded that the existing evidence of the risk was weak and that the benefits of pholcodine outweighed its risks; the Agency recommended that all marketing authorizations for medicines containing pholcodine should be maintained throughout the European Union. The main manufacturing countries in 2013 were France (4.5 tons), the United Kingdom (3.2 tons) and Hungary (1.4 tons). Total exports of pholcodine reached 6.2 tons in 2013, the main exporting countries being France (51 per cent), Italy (17 per cent) and Hungary (16 per cent). The main importers in 2013 were Pakistan (2.2 tons), Italy (1.1 tons) and China (864 kg). Further details on exports and imports of pholcodine are provided in annex IV, tables 3 and 4.

Figure 24. Pholcodine: global manufacture, consumption and stocks,[a] 1994-2013



[a]Stocks as at 31 December of each year.

74. Most pholcodine is consumed in the form of preparations listed in Schedule III of the 1961 Convention; in 2013, such preparations accounted for 90 per cent of total consumption. Global consumption of pholcodine amounted to 8.6 tons (173 million S-DDD) in 2013. The major consumer countries and territories in 2013 were Pakistan (16.2 per cent), Italy (13.6 per cent), the United Kingdom and France (both 12.9 per cent) and Hong Kong Special Administrative Region of China (12.5 per cent). Global stocks of pholcodine increased to 11.2 tons in 2013. Major stocks were held by the United Kingdom (30.5 per cent of global stocks), Hong Kong Special Administrative Region of China (18.5 per cent) and France (15.8 per cent).

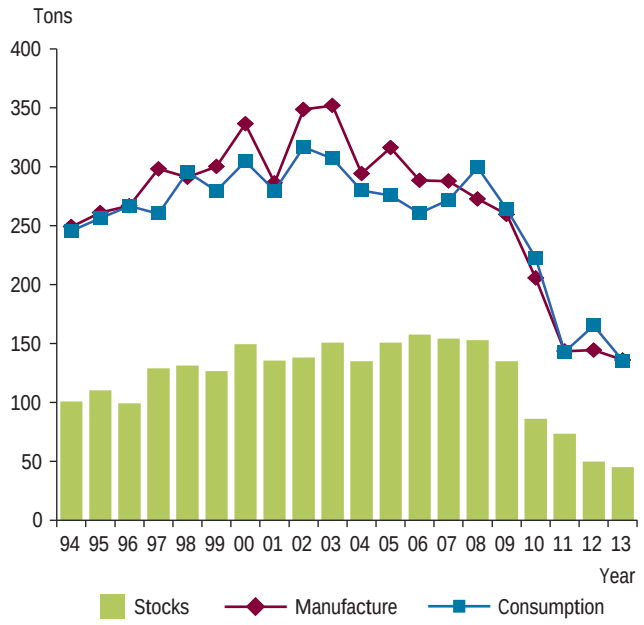
Synthetic opioids

75. Synthetic opioids are used in the treatment of chronic, moderate or severe pain. They are also used for the induction of general anaesthesia and in the treatment of specific conditions such as gastrointestinal disorders. In addition, methadone is used in treatment related to drug dependency.

Dextropropoxyphene

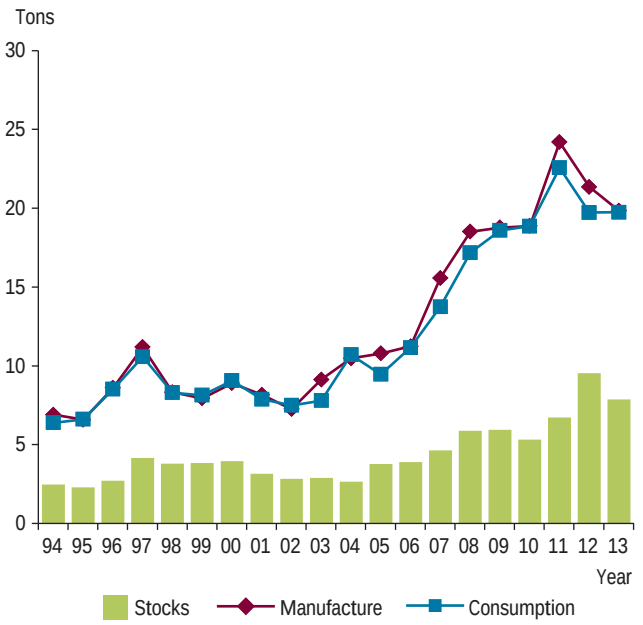
76. Global manufacture of dextropropoxyphene has followed a downward trend since 2003, when 349.6 tons were manufactured. This decline is attributed to the fact that the substance has been banned in several countries owing to concerns over serious side effects. In May 2013, the Ministry

Figure 25. Dextropropoxyphene: global manufacture, consumption and stocks,[a] 1994-2013



[a]Stocks as at 31 December of each year.

Figure 26. Diphenoxylate: global manufacture, consumption and stocks,[a] 1994-2013



[a]Stocks as at 31 December of each year.

of Health and Family Welfare of India issued a gazette notification suspending the manufacture, sale and distribution of dextropropoxyphene and formulations containing dextropropoxyphene in the country. Manufacturing therefore declined again, to 135 tons in 2013 (see figure 25). Despite the suspension measure, India was the only country reporting manufacture in significant quantities in 2013. Global exports also continued to decline in 2013 and amounted to just 199 kg, almost exclusively from India, the principal exporting country of dextropropoxyphene, with 90 per cent of global exports. The only other country with some export was Cyprus, at 19 kg, or 9.9 per cent. Australia imported almost all (99.9 per cent) of the quantities available.

77. Dextropropoxyphene is consumed mainly in the form of preparations listed in Schedule III of the 1961 Convention (98.5 per cent of total consumption in 2013). Global use of dextropropoxyphene peaked at 315 tons in 2002 and, in general, has fallen since. From 2011 to 2012 it increased slightly to 169 tons, only to decrease again to 134 tons in 2013 (about 670 million S-DDD). The countries reporting the highest utilization in 2013 were India (98.3 per cent of the global total) and the United States (1.17 per cent). Global stocks of dextropropoxyphene continued decreasing, amounting to 44.5 tons in 2013. The largest stocks were held by India (40 tons), Ireland (1.3 tons) and Israel (708 kg).

Diphenoxylate

78. Global manufacture of diphenoxylate has followed a generally rising trend during the past two decades, reaching a peak of 24.1 tons in 2011, but fell to just under 20 tons in 2013 (see figure 26). India remained the main manufacturing country in 2013, contributing 85.8 per cent of the global total, followed by China (10 per cent) and the United States (3 per cent). India was also the main exporting country, accounting for 1.3 tons, or 97 per cent of world exports. The main importing country in 2013 continued to be the Islamic Republic of Iran (740 kg), followed by Pakistan (501 kg) and Singapore (155 kg).

79. Diphenoxylate is consumed mainly in the form of preparations listed in Schedule III of the 1961 Convention (more than 99 per cent of total consumption in 2013), mostly as an antidiarrhoeal agent. Global use in 2013 reached 19.7 tons, corresponding to 1.3 billion S-DDD. The countries reporting the highest utilization in 2013 were India (81 per cent of the global total), China (9.6 per cent), the Islamic Republic of Iran (3.8 per cent) and the United States (3.6 per cent). Global stocks of diphenoxylate in 2013 amounted to 7.8 tons, 88 per cent of which was held by India and 4 per cent by the United States.

Fentanyl

80. Fentanyl, when used as an analgesic, is about 100 times as potent as morphine and is therefore used only in very small doses (for example, 0.005-0.1 mg in injectable form). Until the 1980s, fentanyl was used mainly for the induction of anaesthesia and, in combination with other substances, for balanced anaesthesia in short-term surgical interventions. Since the early 1990s, however,

controlled-release preparations (patches) of fentanyl and new delivery methods, including a sublingual spray for cancer patients, have been increasingly used in all parts of the world for the treatment of severe pain.

81. Global manufacture of fentanyl increased slowly until 1992, when it reached 77 kg. After that, manufacture of fentanyl grew rapidly, reaching the record level of 4.3 tons in 2010; it then decreased to 3 tons in 2013 (see figure 27). In 2013, the United States was the main manufacturing country of fentanyl (46 per cent of global manufacture), followed by Germany (20 per cent), South Africa (17 per cent) and Belgium (10 per cent). Germany was the principal exporting country, exporting 360 kg of fentanyl in 2013, followed by Belgium (312 kg) and South Africa (209 kg). In 2013, Germany was the leading importing country of fentanyl (476 kg), followed by the United Kingdom (426 kg), Spain (91 kg) and Canada (89 kg). Further details on exports and imports of fentanyl are contained in annex IV, tables 3 and 4.

82. Global consumption of fentanyl followed a steadily increasing trend and reached a peak of 1.7 tons in 2010. Global consumption stood at 1.7 tons (corresponding to 2.8 billion S-DDD) in 2013, which made fentanyl the synthetic opioid with the highest consumption in terms of defined daily doses. The United States, accounting for 31.5 per cent of the world total, continued to be the main consumer country in 2013, followed by Germany, Spain, France and Canada (see figure 28). Ranked according to defined daily doses for statistical purposes consumed per million inhabitants per day, the countries and territories with the highest consumption of fentanyl in 2013 were Germany (26,154 S-DDD), Belgium (15,132 S-DDD), Gibraltar (12,290 S-DDD) and Austria (12,265 S-DDD). In 2013, global stocks of fentanyl stood at 4.5 tons, which was almost the same level as in 2012. The largest stocks were held by the United States (29 per cent of global stocks) and Belgium (27 per cent).

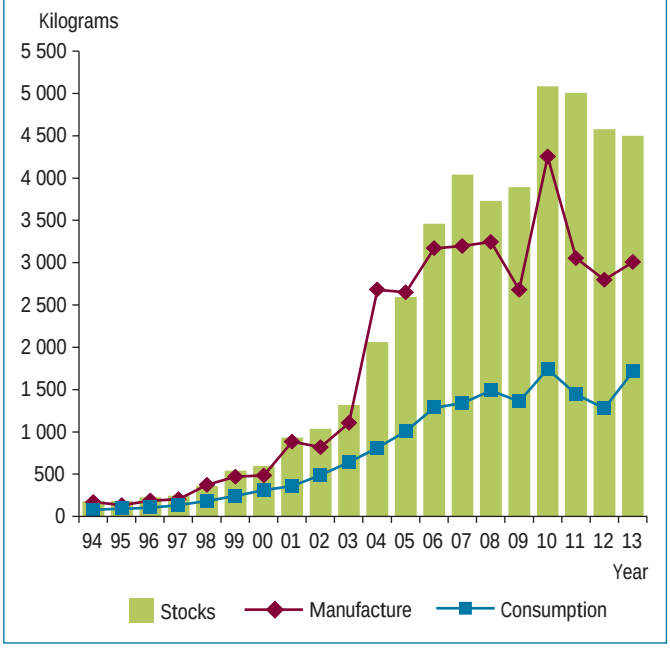
Fentanyl analogues

83. The fentanyl analogues alfentanil, remifentanil and sufentanil are used mainly as anaesthetics.

Alfentanil

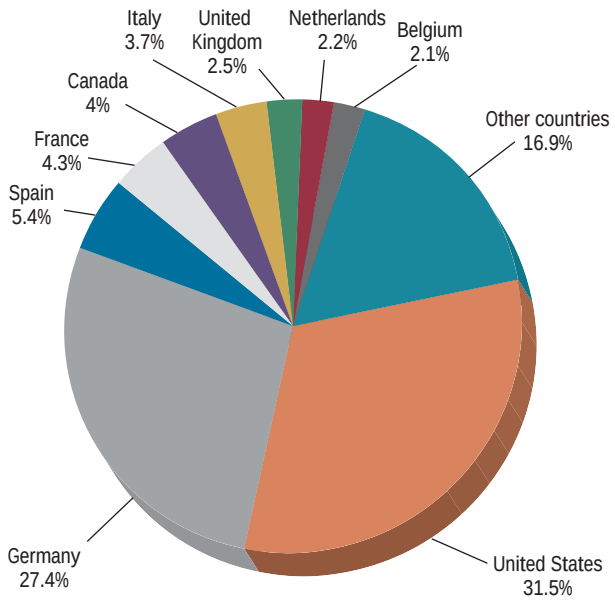
84. Global manufacture of alfentanil has fluctuated sharply from year to year; it declined from 38.5 kg in 2010 to 11.9 kg in 2011. In 2012, global manufacture increased sharply to 78.3 kg, but decreased again to 14.7 kg in 2013. The principal manufacturers in 2013 were the United States (48 per cent of global manufacture), Slovakia (33 per cent), the United Kingdom (10 per cent) and Brazil (8 per cent). Belgium, which had reported 71 per cent of the global manufacture in 2012, to satisfy, as the main exporter in 2013 (51 per cent of total exports), an increased demand by importers in that same year, reported a minimal amount in 2013, corresponding to 0.5 per cent. In line with the decrease in manufacturing, global consumption of alfentanil also decreased in 2013 (to 17 kg) in comparison with 2012 (20.3 kg). The United Kingdom was the main consumer country of alfentanil

Figure 27. Fentanyl: global manufacture, consumption and stocks,[a] 1994-2013



[a]Stocks as at 31 December of each year.

Figure 28. Fentanyl: distribution of consumption, 2013



(41 per cent of global consumption), followed by Italy (11 per cent), Germany (8 per cent) and France (7 per cent). Detailed information on the consumption of fentanyl analogues is provided in table XIII.1. In 2013, global stocks of alfentanil decreased to 71 kg, which is lower than the previous year's level. Despite the absence of manufacturing in 2013, Belgium continued to hold the largest amount of alfentanil in stock (59 per cent), followed by the United States (16 per cent), Italy (8 per cent) and Germany (8 per cent).

Remifentanil

85. In 2013, global manufacture of remifentanil decreased to 70 kg. Manufacturing of remifentanil has been fluctuating considerably since 2008, when 43 kg was manufactured: it rose to 86 kg in 2009, then dropped to 32 kg in 2010, rose again to 93 kg in 2011 and decreased slightly to 82 kg in 2012. Belgium accounted for 53 per cent of global manufacture, followed by China (20 per cent), the United Kingdom (19 per cent) and Switzerland (3 per cent). The rising trend in global consumption that started in 2000 stopped in 2013, when consumption dropped to 44 kg. China and Italy were the main consumers (accounting each for 13 per cent of global consumption), followed by Japan (11 per cent), Germany (10 per cent), Argentina (6 per cent) and Brazil (5 per cent). In 2013, global stocks of remifentanil increased to 225 kg, of which 51 per cent was held by the United Kingdom, 10 per cent by China, 8 per cent by Belgium, 6 per cent by Italy and 5 per cent each by Germany and Hungary.

Sufentanil

86. Global manufacture of sufentanil amounted to 7 kg in 2013, the second highest ever after 2008. The United States and Slovakia manufactured 42 per cent and 23 per cent of the global amount, respectively. Global consumption of sufentanil decreased to 3.3 kg in 2013. China, the United States, France, Germany, Italy and Austria were the six largest consumers of sufentanil, together accounting for 84 per cent of the global total. In 2013, global stocks of sufentanil totalled 13 kg, most of which was held by the United States (51 per cent), Belgium and Germany (both 13 per cent).

Ketobemidone

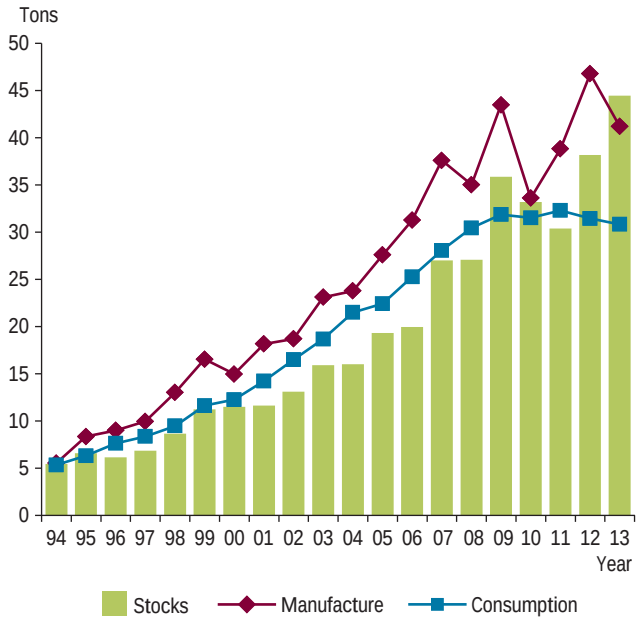
87. Ketobemidone is a powerful opioid analgesic with a similar effectiveness against pain as morphine. Its manufacture and use is concentrated in a small number of European countries. The manufacture of ketobemidone reached 507 kg in 2003, the highest level in 10 years. Manufacture was reported in 2008 by Denmark, which manufactured less than 1 kg, and in 2011 by the United Kingdom, which manufactured 182 kg. In 2012 there was no manufacture and in 2013 only 3.2 kg were reported by Denmark. Germany, which has the largest stock, was also the main exporting country of ketobemidone in 2013, accounting for 109 kg, or 77 per cent of global exports, followed by Denmark (14 kg, or 10 per cent of global exports). The main importing countries were Denmark (24 kg), Sweden (18 kg), France (14 kg) and Norway (10 kg).

88. Consumption of ketobemidone occurs mostly in the Scandinavian countries. In 2013 it amounted to 68 kg (corresponding to 1.4 million S-DDD). Sweden (43 per cent of the global total), Denmark (36 per cent) and Norway (18 per cent) remained the main consumer countries of ketobemidone. Global stocks of ketobemidone stood at 142 kg in 2013. Germany continued to hold the largest stocks (77 per cent of the global total).

Methadone

89. Global manufacture of methadone has increased steadily over the past 20 years, with some fluctuations, and decreased slightly to 41.4 tons (5.5 tons less than in 2012) (see figure 29). The use of methadone in the context of long-term agonist opioid therapy has been growing in many countries, especially in relation to reducing injecting drug use and related health consequences such as HIV. Methadone is also used in several countries for the treatment of pain. The two countries accounting for most of the global manufacture in 2013 were the United States (20.5 tons, or almost 50 per cent of global manufacture) and Switzerland (14 tons, or 34 per cent). Three other countries reported manufacture of methadone in 2013 in

Figure 29. Methadone: global manufacture, consumption and stocks,[a] 1994-2013



[a]Stocks as at 31 December of each year.

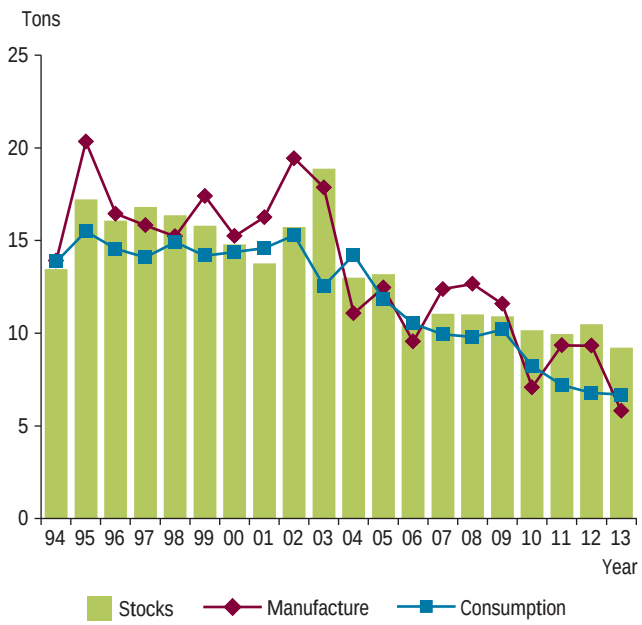
quantities of more than 1 ton: Germany (2.1 tons), China (1.9 tons) and Spain (1.1 tons).

90. Global exports of methadone amounted to 17.2 tons in 2013. Switzerland remained the main exporting country (11.4 tons), followed by the United States (1.1 tons), India (823 kg) and the Netherlands (680 kg). The largest imports of methadone were reported by the United Kingdom (2.9 tons), Canada (2 tons), Germany (1.6 tons), Italy (1.1 tons) and the Netherlands (1.1 tons). Further details on exports and imports of methadone are contained in annex IV, tables 3 and 4.

91. Global consumption of methadone increased, with some fluctuations, and amounted to 31 tons in 2013. The United States remained the main consumer country (51 per cent of the global total), followed by the United Kingdom (7 per cent) and China (6 per cent). More details on the consumption of methadone can be found in table XII.

92. Global stocks of methadone increased to 45 tons in 2013. The countries holding the largest stocks remained the United States (36 per cent of global stocks) and Switzerland (29 per cent).

Figure 30. Pethidine: global manufacture, consumption and stocks,[a] 1994-2013



[a]Stocks as at 31 December of each year.

Pethidine

93. Global manufacture of pethidine has followed a generally declining trend over the past 20 years, reaching a relative low of 7 tons in 2010. The decline is attributable to pethidine's low potency, short duration of action and unique toxicity, as compared with other available opioid analgesics. It is considered an effective analgesic for acute pain but not useful for chronic pain. It is still being used for very specific indications. Several countries have put strict limits on its use but some physicians continue to use it as a strong first-line opioid. In 2013, global manufacture decreased to 5.8 tons, its lowest level in the past two decades (see figure 30). Spain was the main manufacturing country in 2013, with 2.4 tons, or 43.2 per cent of global manufacture, followed by the United States (1.4 tons, or 25.9 per cent) and Slovakia (1.2 tons, or 20.9 per cent). In 2013, global exports of pethidine remained at 4.9 tons. Spain remained the principal exporting country in 2013, accounting for 40 per cent of global exports. The main importer of pethidine in 2013 was Germany (604 kg), followed by Canada (464 kg) and the Islamic Republic of Iran (458 kg). Further details on exports and imports of pethidine are contained in annex IV, tables 3 and 4.

94. Pethidine consumption amounted to 6.7 tons in 2013 (corresponding to 169 million S-DDD). The United States and China were the main consumer countries, accounting for 24 per cent and 18 per cent, respectively. Other countries consumed well below that level: the Islamic Republic of Iran consumed 6.9 per cent and Brazil consumed 5 per cent. Global stocks of pethidine totalled 9.5 tons in 2013, showing a slow but continual decline that may be due to its limited use by medical practitioners, as mentioned above. The largest stocks were held by the United States (31 per cent of global stocks), Germany (19 per cent) and Slovakia (8 per cent).

Tilidine

95. Global manufacture of tilidine has fluctuated from year to year; it amounted to 49.9 tons in 2013. Germany continued to be the only manufacturer in 2013. Total exports of tilidine increased sharply from 8 tons in 2011 to 19.5 tons in 2012 and increased again to 33 tons in 2013. Germany continued to be the principal exporting country in 2013, accounting for 55.7 per cent of global exports, which is a considerable reduction from 2012, when it accounted for 98 per cent. In 2013, the second main exporting country was Serbia, which reported exports amounting to 44.1 per cent of the global total.

96. Consumption of tilidine reached a record level of 59.1 tons in 2012, but dropped to 19.9 tons in 2013 (corresponding to 99 million S-DDD). Most tilidine is consumed in Germany, which accounted for 88.9 per cent of the world total in 2013. In 2013, the countries with the highest consumption of tilidine, in terms of S-DDD consumed per million inhabitants per day, were Germany (2,959 S-DDD) and Belgium (2,659 S-DDD). Global stocks of tilidine stood at 57.8 tons in 2013, almost all (99.4 per cent) being held by Germany.

Trimeperidine

97. Global manufacture of trimeperidine has fluctuated from year to year. After decreasing in 2012 it increased again in 2013 to 342 kg. India, the Russian Federation and Ukraine were the only manufacturers in 2013, accounting for 56 per cent, 23 per cent and 21 per cent of total manufacture, respectively. India was again the leading exporting country of trimeperidine in 2013 (193 kg), followed by Ukraine (27 kg), Latvia (3 kg) and the Russian Federation (1.7 kg). Most of the global consumption of trimeperidine in 2013 (228 kg, corresponding to 1.4 million S-DDD) occurred in the Russian Federation (64 per cent), Ukraine (10 per cent), Kazakhstan (9 per cent) and Belarus (7 per cent).

98. The countries with the highest consumption of trimeperidine, expressed in S-DDD per million inhabitants per day, were Belarus (26 S-DDD), Kazakhstan (18 S-DDD), the Republic of Moldova (17 S-DDD), Latvia (16 S-DDD) and the Russian Federation (14 S-DDD). In 2013, global stocks increased to 344 kg, with the Russian Federation reporting the largest share (75 per cent of the global total).

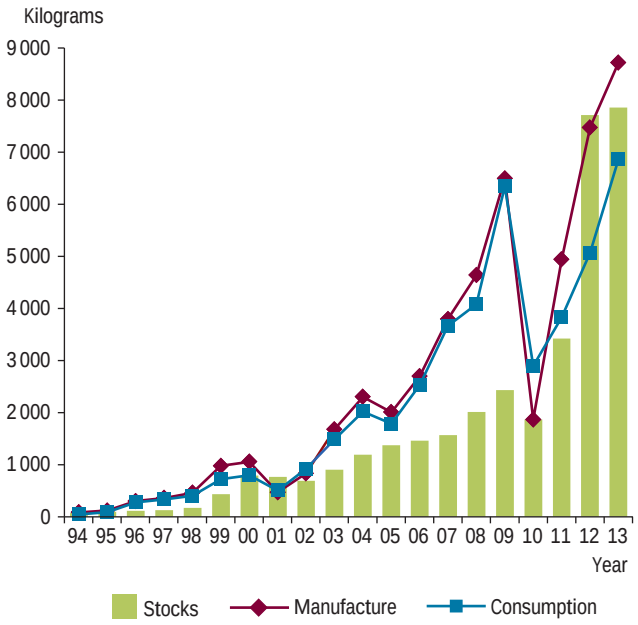
Opioid analgesics controlled under the 1971 Convention

99. Buprenorphine and pentazocine are opioid analgesics that are controlled under the 1971 Convention. Brief information on these opioids is included in the present publication; more detailed comments on statistics on buprenorphine and pentazocine can be found in the INCB technical report on psychotropic substances.[19]

Buprenorphine

100. Buprenorphine is an opioid agonist used as an analgesic and in detoxification and substitution treatment for opioid dependence. Buprenorphine produces effects similar to other opioids, but less than those of heroin. For this reason buprenorphine is used to produce sufficient agonist effect to enable opioid-addicted individuals to discontinue the misuse of opioids without experiencing withdrawal symptoms. Since the late 1990s, global manufacture of buprenorphine has increased steadily (with the exception of 2010, when there was a sharp decrease), reaching a peak of 8.7 tons in 2013 (see figure 31). The main manufacturing countries were the United Kingdom (3,963 kg), the United States (1,179 kg), Belgium (1,011 kg), Germany (769 kg), the Czech Republic (700 kg), Switzerland (570 kg) and Australia (513 kg). The volume of trade in buprenorphine amounted to 7.5 tons in 2013. The main exporters were, in descending order, the United Kingdom, the Czech Republic, Belgium and Germany. The main importing countries of buprenorphine in 2013 were the United States, the United Kingdom, Germany and France, in descending order.

Figure 31. Buprenorphine: global calculated consumption,[a] reported manufacture and stocks,[b] 1994-2013



[a]Approximate calculated global consumption, determined on the basis of statistical data submitted by Governments.
[b]Stocks as at 31 December of each year; data are provided on a voluntary basis and may therefore be incomplete.

Pentazocine

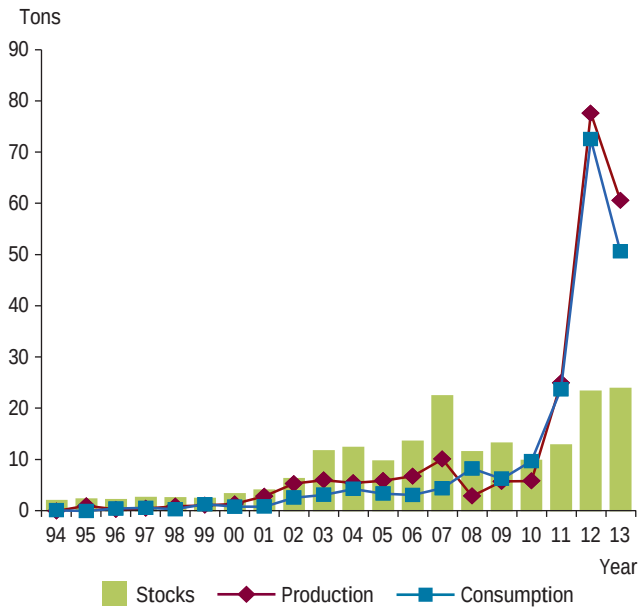
101. Pentazocine is an opioid analgesic with properties and uses similar to those of morphine. India is the main manufacturer and it has not submitted data for 2013. If India is excluded for 2013, the global manufacture of pentazocine stood at 1.3 tons. Of this, most pentazocine was manufactured by Italy (1 ton) and the United States (282 kg). Without India, the world's leading exporters of pentazocine in 2013 were Italy, the United States, Switzerland, Portugal and Slovenia. In 2013, the main importers were the United States, Nigeria and Pakistan.

[19]E/INCB/2014/3.

Cannabis

102. Prior to 2000, the United States was the only country to report the use of cannabis solely for scientific purposes. Since then, some countries have started to use cannabis and/or cannabis extracts[20] for medical purposes, in addition to scientific research. Global licit production of cannabis was reported to be at 60.4 tons in 2013, which was below the record high of 77 tons in 2012, but still considerably above the 24.9 tons registered in 2011 (see figure 32). It is expected that in 2014 there will be a further increase, since several countries are considering the possibility of instituting medical cannabis programmes and the possibility of prescribing medicines based on cannabis extracts. The principal producers in 2013 remained Canada (73 per cent), the United Kingdom (18 per cent) and Israel (8 per cent). While cannabis produced in Canada is used for medical purposes in that country, cannabis produced in the United Kingdom is used mainly for the manufacture of cannabis extracts for medicinal preparations, part of which is exported to other countries. Other exporters, although with much smaller quantities than the United Kingdom, are the Netherlands and Denmark. Importing countries were Germany (382 kg), Spain (195 kg), Canada (143 kg), Denmark (83 kg) and Italy (82 kg).

Figure 32. Cannabis: global production, consumption and stocks,[a] 1994-2013



[a]Stocks as at 31 December of each year.

103. Global consumption of cannabis amounted to 51 tons in 2013. Canada remained the main consumer country, mostly of its own production (44 tons) plus a low amount of imports, followed by Israel (5 tons), Germany (535 kg), Spain (195 kg) and the Netherlands (182 kg). The United Kingdom, which ranked second in 2012 in terms of consumption with 8 tons, reported only 83 kg for 2013. The countries reporting significant cannabis stocks in 2013 were the United Kingdom (21.2 tons), Canada (1.4 tons) and the United States (446 kg). The amount indicated by the United States federal authorities does not include the amounts cultivated, manufactured and consumed in states that have "medical cannabis" programmes.

[20]In statistical reports to INCB, data on cannabis extracts are expressed in terms of cannabis, using the conversion factors published by INCB in the list of narcotic drugs under international control ("Yellow List").

Coca leaf and cocaine

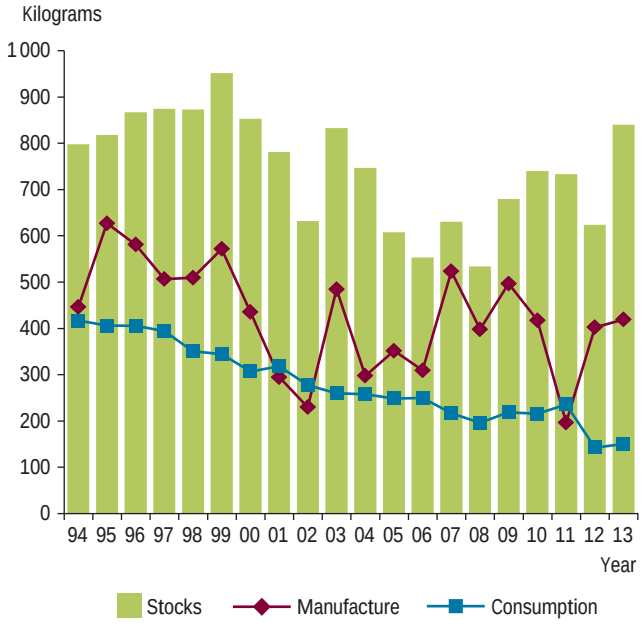
Coca leaf

104. Peru has been the only country exporting coca leaf for the global market since 2000. In the past five years, the amount produced has stabilized at about 2,500 tons, which is the global amount reported for 2013. The United States has been the leading importing country, accounting for almost 100 per cent of global imports and also for the large amount utilized (200 tons, or 72 per cent). Coca leaf is used in the United States for extraction of flavouring agents and the manufacture of cocaine as a by-product. Imports by the United States have been fluctuating: from 175 tons in 2001 to 22 tons in 2006, they rose to 157 tons in 2012 and slightly decreased to 134 tons in 2013. In Peru, the amount of coca leaf used for the manufacture of cocaine totalled 76 tons in 2013, a slight decline from the 83 tons in 2012. In recent years, small quantities of coca leaf have been used in Italy, the Netherlands and Switzerland for the extraction of flavouring agents and in France for use in homeopathic medicines. Stocks of coca leaf held in the United States account for the majority of global stocks. In 2013, stocks held in that country amounted to about 658 tons, or 71 per cent of the world total. Peru held the other significant quantity (268 tons, or 28.9 per cent). Since its reaccession in 2012 to the 1961 Convention, the Plurinational State of Bolivia has provided the Board with some information on its licit cultivation, manufacturing and consumption of coca leaf for the first time. This information is being reviewed and clarified with the Government and therefore is not included in the world totals.

Cocaine

105. Global licit manufacture of cocaine continued the fluctuating trend of the past 20 years by increasing to 419 kg in 2013 from the 403 kg reported in 2012 (see figure 33). The lowest level was registered in 2011 (197 kg) and the highest in 1995 (627 kg). The main manufacturing countries in 2013 were Peru (357 kg) and the United States (60 kg). Peru, which had been dominating exports, reported no quantity for export in 2013. Therefore, the United Kingdom, where imported cocaine is purified and partly re-exported, became the major exporter (94 kg, or 88 per cent of the global total). The declining trend in licit consumption of cocaine continued in 2013, with just 139 kg consumed, down from more than 400 kg in 1994. In 2013, the United States remained the main consumer country of cocaine (39 kg, or 27 per cent of global consumption), followed by the United Kingdom (15 kg), the Netherlands (14 kg), Canada (12 kg), Australia (9 kg), Belgium (8 kg) and Italy (6 kg). In 2013, global stocks of cocaine stood at 841 kg. The countries holding the largest stocks were the United Kingdom (385 kg), Peru (221 kg), the Russian Federation (49 kg), the United States (46 kg) and the Netherlands (32 kg).

Figure 33. Cocaine: global manufacture, consumption and stocks,[a] 1994-2013



[a]Stocks as at 31 December of each year.