



Part three

Supply of opiate raw materials and demand for opiates for medical and scientific purposes

Troisième partie

Offre de matières premières opiacées et demande d'opiacés pour les besoins médicaux et scientifiques

Tercera parte

Oferta de materias primas de opiáceos y demanda de opiáceos para fines médicos y científicos



Notes:

Part three, entitled "Supply of opiate raw materials and demand for opiates used for medical and scientific purposes", contains an analysis of the current situation regarding that area of supply and demand. The analysis serves as background information for the conclusions and recommendations on the subject made by the Board in its annual report, with a view to maintaining a lasting balance between the supply of and demand for opiate raw materials. The data used in the analysis are based on statistical reports on the cultivation of opium poppy, the production and utilization of opiate raw materials and the consumption of opiates, furnished by Governments in respect of 2011, as well as advance data for 2012 on the cultivation of opium poppy and production of opiate raw materials, submitted on a voluntary basis by the major producing countries and supplemented by the relevant estimates for 2013. The data for 2012 are provisional, and those for 2013 are projections based on the information available. All data relating to production, utilization, consumption, trade and stocks are expressed in terms of morphine or thebaine equivalent, for ease of comparison. The text is supplemented by tables and figures.

Notes:

La troisième partie intitulée "Offre de matières premières opiacées et demande d'opiacés pour les besoins médicaux et scientifiques" comprend une analyse de la situation actuelle de l'offre et de la demande. Cette analyse fournit à l'Organe les renseignements sur lesquels il se fonde pour formuler les conclusions et les recommandations à ce sujet qui figurent dans son rapport annuel, l'objectif étant de maintenir un équilibre durable entre l'offre de matières premières opiacées et la demande d'opiacés. Les données utilisées dans l'analyse reposent sur les rapports statistiques relatifs à la culture du pavot à opium, à la production et à l'utilisation de matières premières opiacées et à la consommation d'opiacés fournis par les

gouvernements pour 2011, ainsi que sur les statistiques préliminaires pour 2012 concernant la culture du pavot à opium et la production de matières premières opiacées qui ont été fournies par les principaux pays producteurs de leur propre initiative et complétées par les évaluations correspondantes pour 2013. Les chiffres pour 2012 sont provisoires et ceux pour 2013 des projections établies à partir des informations disponibles. Tous les chiffres concernant la production, l'utilisation, la consommation, le commerce et les stocks sont exprimés en équivalent morphine ou équivalent thébaine pour faciliter la comparaison. Le texte est complété par des tableaux et des figures.

Notas:

La tercera parte "Oferta de materias primas de opiáceos y demanda de opiáceos utilizados con fines médicos y científicos" contiene un análisis de la situación actual en lo que atañe a esos aspectos de la oferta y la demanda. El análisis sirve de base a las conclusiones y recomendaciones que la Junta formula sobre el tema en su informe anual, con miras a mantener un equilibrio estable entre la oferta y la demanda de materias primas de opiáceos. Los datos utilizados en el análisis se basan en los informes estadísticos que los gobiernos han suministrado respecto de 2011 sobre el cultivo de la adormidera, la producción y la utilización de materias primas de opiáceos y el consumo de opiáceos, así como en los datos preliminares correspondientes a 2012 sobre el cultivo de la adormidera y la producción de materias primas de opiáceos, datos que los principales países productores presentan en forma voluntaria, complementados con las previsiones pertinentes correspondientes a 2013. Los datos utilizados respecto del año 2012 son provisionales y los correspondientes a 2013 representan proyecciones hechas sobre la base de la información disponible. Para facilitar la comparación, todos los datos relativos a la producción, la utilización, el consumo, el comercio y las existencias se expresan en función del equivalente de morfina o tebaina. El texto se complementa con cuadros y figuras.

SUPPLY OF OPIATE RAW MATERIALS AND DEMAND FOR OPIATES FOR MEDICAL AND SCIENTIFIC PURPOSES

Introduction

1. The International Narcotics Control Board (INCB), in fulfilment of the functions assigned to it under the Single Convention on Narcotic Drugs of 1961¹ and the relevant resolutions of the Economic and Social Council and the Commission on Narcotic Drugs, regularly examines issues affecting the supply of and the demand for opiates for licit requirements, and endeavours to ensure a standing balance between that supply and demand. The present section contains an analysis of the current situation based on the data provided by Governments.²

2. The analysis presented below has been prepared by examining the data on opiate raw materials and on opiates manufactured from those raw materials. In the analysis, raw materials rich in morphine and the opiates derived from them are, in accordance with the methodology adopted by INCB, considered separately from raw materials rich in thebaine and the opiates derived from them. Global supply of opiate raw materials is measured by the levels of stocks and production. Global demand for opiate raw materials is assessed on the basis of data on total utilization of opiate raw materials for the manufacture of all opiates (see para. 19 below). Data concerning total consumption and stocks of opiates are also included, as appropriate.

3. The present analysis complements the comments on the reported statistics for individual opiate raw materials obtained from opium poppy (opium, poppy straw and concentrate of poppy straw) and for the opiates obtained from them; readers are invited to turn to those comments for more in-depth information on long-term developments concerning the individual substances (see pages 21-42 above). The main focus of the analysis is on the present situation, including the last four years for which statistical data are available. For 2012 and 2013, the data on production are based on advance statistical information and estimates received from the main producing countries,³ while the data on the demand for opiate raw materials and the opiates derived from them are INCB projections based on past trends and taking into account relevant estimates furnished by Governments.

4. Finally, in this section INCB examines the trends in global consumption of all opiates and synthetic opioids over the 20-year period from 1992 to 2011. The findings derived from the analysis complement the comments on reported statistics on individual substances and reflect the changes over time in the relative importance of opiates, which are derived from opium poppy, in the global consumption of opioids.

Supply of opiate raw materials

Cultivation of opium poppy for the extraction of alkaloids

5. Table 1 provides information on the area cultivated with opium poppy (*Papaver somniferum*) for the extraction of alkaloids in the main producer countries; data on varieties rich in morphine and those rich in thebaine are listed separately, where applicable. For both types of raw materials, the estimated area of cultivation is given for each year. Data on the area sown and the area actually harvested are given for the years for which such data are available.

6. In 2011, the area sown with opium poppy rich in morphine in major producing countries increased over the levels of the previous year in Australia, India, Spain and Turkey but decreased in France and Hungary. In Spain, the actual area harvested increased by 47 per cent compared to the previous year, while in India the area harvested increased by 35 per cent; in Australia it increased by 20 per cent. In Hungary the area harvested decreased by 17 per cent. The increases or decreases in other major producing countries were all less than 10 per cent of the area harvested in the previous year. India is the only opium-producing country included in the present analysis. The total area sown in major producing countries was 90 per cent of the total estimated area. In 2011, cultivation of opium poppy rich in thebaine increased in Australia (a 19 per cent increase in the area actually harvested) and decreased in France and Spain (decreases of 84 per cent and 95 per cent, respectively, in the area actually harvested). Hungary had previously cultivated small areas of opium poppy rich in thebaine from 2005 to 2007, with the area actually harvested always less than 20 hectares. After a cessation in cultivation of poppy straw rich in thebaine following 2007, Hungary resumed cultivation in 2011, with about 1,532 hectares being harvested. The total area sown in major producing countries was only 56 per cent of the total estimated area.

¹United Nations, *Treaty Series*, vol. 520, No. 7515.

²The analysis excludes data on China and the Democratic Republic of Korea, which produce opiate raw materials solely for domestic use. It also excludes data on the utilization of seized opium that was released for licit use in Iran (Islamic Republic of) and on the demand for opiates derived from such opium.

³Those data have been adjusted, as necessary, to reflect industrially recoverable alkaloid content in the raw materials in question.

Table 1. Area cultivated with opium poppy rich in morphine and opium poppy rich in thebaine, 2008-2013
(Estimated area, as confirmed by the International Narcotics Control Board, area sown and area harvested, in hectares)

| | 2008 | 2009 | 2010 | 2011 | 2012 ^a | 2013 ^b |
|--|--------|--------|---------------------|---------------------|---------------------|---------------------|
| Australia | | | | | | |
| Opium poppy rich in morphine | | | | | | |
| Estimated area | 5 250 | 10 506 | 12 770 ^c | 14 050 ^c | 15 960 ^c | 11 100 ^c |
| Area sown | 4 885 | 5 447 | 10 462 ^c | 11 832 ^c | 11 194 ^c | .. |
| Actual area harvested | 4 108 | 4 598 | 9 127 ^c | 10 973 ^c | 10 158 ^c | .. |
| Opium poppy rich in thebaine | | | | | | |
| Estimated area | 9 700 | 11 857 | 11 650 | 13 580 | 12 390 | 12 000 |
| Area sown | 8 024 | 10 439 | 11 441 | 13 165 | 12 191 | .. |
| Actual area harvested | 7 807 | 8 894 | 10 922 | 13 024 | 11 559 | .. |
| Opium poppy rich in morphine and thebaine | | | | | | |
| Total estimated area | 14 950 | 22 363 | 24 420 ^c | 27 630 ^c | 28 350 ^c | 23 100 ^c |
| Total area sown | 12 909 | 15 886 | 22 122 ^c | 24 997 ^c | 23 448 | .. |
| Total actual area harvested | 11 915 | 13 492 | 20 049 ^c | 23 997 ^c | 21 717 | .. |
| France | | | | | | |
| Opium poppy rich in morphine | | | | | | |
| Estimated area | 3 650 | 7 500 | 8 000 | 8 978 | 11 000 | 11 000 |
| Area sown | 3 744 | 6 837 | 9 800 | 9 370 | 8 960 | .. |
| Actual area harvested | 3 683 | 6 750 | 9 400 | 8 592 | 8 680 | .. |
| Opium poppy rich in thebaine | | | | | | |
| Estimated area | 2 650 | 2 500 | 5 000 | 3 922 | 2 000 | 2 000 |
| Area sown | 2 551 | 3 002 | 700 | 930 | 1 210 | .. |
| Actual area harvested | 2 534 | 2 990 | 700 | 110 | 1 190 | .. |
| Opium poppy rich in morphine and thebaine | | | | | | |
| Total estimated area | 6 300 | 10 000 | 13 000 | 12 900 | 13 000 | 13 000 |
| Total area sown | 6 295 | 9 839 | 10 500 | 10 300 | 10 170 | .. |
| Total actual area harvested | 6 217 | 9 740 | 10 100 | 8 702 | 9 870 | .. |
| Hungary | | | | | | |
| Opium poppy rich in morphine | | | | | | |
| Estimated area | 12 500 | 15 500 | 8 000 | 7 000 | 9 500 | 11 800 |
| Area sown | 3 983 | 8 204 | 11 289 | 7 972 | 9 965 | .. |
| Actual area harvested | 2 262 | 1 114 | 7 308 | 6 025 | 3 755 | .. |
| Opium poppy rich in thebaine | | | | | | |
| Estimated area | — | — | 3 000 | 3 720 | 3 000 | 5 100 |
| Area sown | — | — | — | 2 399 | 3 380 | .. |
| Actual area harvested | — | — | — | 1 532 | 919 | .. |
| Opium poppy rich in morphine and thebaine | | | | | | |
| Total estimated area | 12 500 | 15 500 | 11 000 | 10 720 | 12 500 | 16 900 |
| Total area sown | 3 983 | 8 204 | 11 289 | 10 371 | 13 345 | .. |
| Total actual area harvested | 2 262 | 1 114 | 7 308 | 7 557 | 4 674 | .. |
| India | | | | | | |
| Opium poppy rich in morphine | | | | | | |
| Total estimated area | 4 680 | 11 262 | 22 000 | 22 000 | 21 220 | .. |
| Total area sown | 4 680 | 11 020 | 15 851 | 17 262 | 16 021 | .. |
| Total actual area harvested | 2 653 | 8 853 | 12 237 | 16 518 | 12 092 | .. |

Table 1. (continued)

| | 2008 | 2009 | 2010 | 2011 | 2012 ^a | 2013 ^b |
|--|--------|--------|--------|--------|-------------------|-------------------|
| Spain | | | | | | |
| Opium poppy rich in morphine | | | | | | |
| Estimated area | 6 000 | 6 590 | 7 000 | 8 500 | 10 000 | 10 100 |
| Area sown | 8 000 | 7 000 | 8 383 | 9 771 | 10 742 | .. |
| Actual area harvested | 5 507 | 6 865 | 6 439 | 9 488 | 9 308 | .. |
| Opium poppy rich in thebaine | | | | | | |
| Estimated area | 2 500 | 4 410 | 5 000 | 5 500 | 2 000 | 3 800 |
| Area sown | 2 000 | 5 000 | 3 529 | 186 | 8 | .. |
| Actual area harvested | 2 537 | 4 925 | 3 528 | 186 | 7 | .. |
| Opium poppy rich in morphine and thebaine | | | | | | |
| Total estimated area | 8 500 | 11 000 | 12 000 | 14 000 | 12 000 | 13 900 |
| Total area sown | 10 000 | 12 000 | 11 912 | 9 957 | 10 750 | .. |
| Total actual area harvested | 8 044 | 11 790 | 9 967 | 9 674 | 9 315 | .. |
| Turkey | | | | | | |
| Opium poppy rich in morphine | | | | | | |
| Total estimated area ^d | 70 000 | 70 000 | 70 000 | 70 000 | 70 000 | 70 000 |
| Total area sown | 35 104 | 60 328 | 55 296 | 61 368 | 37 251 | .. |
| Total actual area harvested | 20 042 | 48 893 | 51 987 | 54 911 | 13 510 | .. |

Note: A field shaded in red signifies that the corresponding total estimated area for both opium poppy rich in morphine and opium poppy rich in thebaine has been exceeded. Two dots (..) indicate that data are not available. Figures not based on official reports (form B and form C) are in blue font.

^aFigures for area sown and actual area harvested in 2012 are based on advance data submitted by Governments to the International Narcotics Control Board.

^bFigures for 2013 estimates submitted by Governments to the Board.

^cFigures for the area cultivated with morphine-rich opium poppy in Australia from 2010 to 2013 include cultivation of an opium poppy variety rich in codeine. In 2010, it was estimated that 800 hectares would be cultivated; in fact, 612 hectares were sown and 580 hectares were harvested.

In 2011, it was estimated that 360 hectares would be cultivated; in fact, 2,029 hectares were sown and 1,927 hectares were harvested. The estimate for cultivation in 2012 is 490 hectares and the estimate for cultivation in 2013 is 2,100 hectares.

^dEstimate referring to the maximum area available for cultivation.

7. The advance data for 2012 show an overall 46 per cent decrease in the actual area of opium poppy rich in morphine harvested in major producing countries for which advance data were available. This was due largely to a 75 per cent decrease in the area harvested in Turkey, which had harvested the greatest area of any country in 2011. The area actually harvested decreased in Australia, Hungary, India, Spain and Turkey and increased in France. Cultivation of opium poppy rich in thebaine measured in terms of area harvested fell in all countries except France. In Spain, the area harvested fell from 186 hectares in 2011 to just 7 hectares in 2012. In France, according to the advance data for 2012, the area harvested has increased to 1,190 hectares, from 110 hectares in 2011.

8. For 2013, estimates for cultivation of opium poppy rich in morphine will increase relative to 2012 in all major producing countries for which there are data. With regard to the cultivation of opium poppy rich in thebaine, all major producing countries estimate increases in the area to be used for the cultivation of that variety of opium poppy.

Production of opiate raw materials

9. Tables 2 and 3 provide an overview of global production of and demand for morphine-rich and thebaine-rich opiate raw materials, respectively, for the period 2008-2013. The total production of morphine-rich opiate raw materials in the main producing countries increased to 541 tons⁴ in morphine equivalent in 2011. Production declined each year from 2004 to 2008, but rose in each of the three subsequent years, owing to increases in production in Australia, India, Spain and Turkey. Turkey remained the largest producer in 2011, accounting for 30 per cent of global production in terms of morphine equivalent. Turkey also remained the largest producer in terms of absolute quantities of poppy straw rich in morphine, followed by Australia (21 per cent of total production), India (16 per cent), Spain (13 per cent), France (13 per cent) and Hungary (2 per cent).

⁴The analysis is based predominantly on raw materials obtained from opium poppy rich in morphine but includes the morphine alkaloid contained in opium poppy rich in thebaine whenever appropriate.

Table 2. Opiate raw materials rich in morphine: production, demand, balance between the two^a and stocks, in tons of morphine equivalent, 2008-2013

| | 2008 | 2009 | 2010 | 2011 | 2012 ^b | 2013 ^c |
|---|-------------|------------|------------|------------|-------------------|-------------------|
| Australia | | | | | | |
| Production | 35 | 60 | 97 | 113 | 148 | 162 |
| France | | | | | | |
| Production | 36 | 84 | 89 | 71 | 102 | 141 |
| Hungary | | | | | | |
| Production | 10 | 5 | 18 | 13 | 23 | 23 |
| India | | | | | | |
| Production | 15 | 45 | 63 | 87 | 109 | 100 ^d |
| Spain | | | | | | |
| Production | 68 | 70 | 47 | 73 | 118 | 125 |
| Turkey | | | | | | |
| Production | 48 | 134 | 140 | 164 | 15 | 104 |
| Other countries | | | | | | |
| Production | 21 | 30 | 25 | 20 | 25 | 25 |
| (1) Total production | 233 | 428 | 479 | 541 | 540 | 680 |
| Demand for | | | | | | |
| Opium | 61 | 54 | 49 | 59 | 70 | 80 |
| Poppy straw and concentrate of poppy straw | 311 | 332 | 352 | 354 | 360 | 365 |
| (2) Total demand for opiate raw materials | 372 | 386 | 401 | 413 | 430 | 445 |
| (3) Total demand for opiates for medical and scientific purposes^e | 322 | 379 | 378 | 391 | 400 | 410 |
| Balance (1) minus (2) | -139 | 42 | 78 | 128 | 110 | 235 |
| Balance (1) minus (3) | -89 | 49 | 101 | 150 | 140 | 270 |
| Stocks of | | | | | | |
| Opium | 77 | 74 | 78 | 113 | .. | .. |
| Poppy straw | 233 | 257 | 266 | 285 | .. | .. |
| Concentrate of poppy straw | 69 | 79 | 74 | 95 | .. | .. |
| Total stocks of opiate raw materials | 379 | 410 | 418 | 493 | 603 | 838 |
| Total stocks of all opiates | 360 | 370 | 378 | 369 | .. | .. |

Note: Two dots (..) indicate that data are not available.

^aFor the balance between supply (stocks and production) of and demand for opiate raw materials rich in morphine, see paragraph 24 below.

^bFigures for 2012 (*in italics*) are based on advance data submitted by Governments to the International Narcotics Control Board.

^cFigures for 2013 (*in italics*) are based on estimates submitted by Governments to the International Narcotics Control Board.

^dEstimated by the secretariat of the International Narcotics Control Board.

^eExcluding demand for substances not controlled under the 1961 Convention as amended by the 1972 Protocol.

10. Global production of opiate raw materials rich in morphine is expected to be about 540 tons in morphine equivalent in 2012 (see table 2), which is the same level as in 2011. Of that quantity, poppy straw will account for 431 tons (80 per cent) and opium will account for 109 tons (20 per cent). A planned, sharp one-year decrease in production in Turkey for 2012 is being offset by increases in production in other producing countries. The main producers in 2012 will be Australia (27 per cent of total production), Spain (22 per cent), India (20 per cent) and France (19 per cent). Those four countries together

are thus expected to account for about 88 per cent of global production of opiate raw materials rich in morphine in 2012.

11. According to the information submitted by the Governments of the main producing countries, it is estimated that global production of opiate raw materials rich in morphine will increase to 680 tons in morphine equivalent in 2013, mainly as a result of a return to previous levels of production in Turkey and a planned increase in production in France.

12. Global production of opiate raw materials rich in thebaine increased from 2010 to 2011, to 275 tons⁵ in thebaine equivalent (see table 3). Australia accounted for 84 per cent of the global total, Spain for 8 per cent and India for 3 per cent. Production increased significantly in Australia, from 156 tons in 2010 to 230 tons in 2011. In Spain, production continued its fall from 63 tons in 2009 to 47 tons in 2010 and to 22 tons in 2011. Production recovered

⁵The analysis is based predominantly on raw materials obtained from opium poppy rich in thebaine but includes the thebaine alkaloid contained in opium poppy rich in morphine whenever appropriate.

slightly in France following a sharp fall from 2009 (30 tons) to 2010 (2 tons); production in France in 2011 was 10 tons.

13. Global production of opiate raw materials rich in thebaine is expected to increase to about 297 tons in thebaine equivalent in 2012. This increase is due to a planned increase in production to about 246 tons in Australia; production is also expected to increase by 9 tons in France. Australia, France and Spain are expected to account for about 95 per cent of the global production of opiate raw materials rich in thebaine in 2012.

Table 3. Opiate raw materials rich in thebaine: production, demand, balance between the two^a and stocks, in tons of thebaine equivalent, 2008-2013

| | 2008 | 2009 | 2010 | 2011 | 2012 ^b | 2013 ^c |
|---|------------|------------|------------|------------|-------------------|-------------------|
| Australia | | | | | | |
| Production | 113 | 142 | 156 | 230 | 246 | 283 |
| France^d | | | | | | |
| Production | 17 | 30 | 2 | 10 | 19 | 24 |
| Hungary | | | | | | |
| Production | 1 | 1 | 0 | 3 | 3 | 4 |
| Spain^d | | | | | | |
| Production | 45 | 63 | 47 | 22 | 17 | 53 |
| India | | | | | | |
| Thebaine extracted from opium | 1 | 4 | 6 | 9 | 11 | 10 ^e |
| Other countries | | | | | | |
| Thebaine extracted from poppy straw (M) | 1 | 1 | 1 | 1 | 1 | 1 |
| (1) Total production | 178 | 241 | 212 | 275 | 297 | 375 |
| Demand for | | | | | | |
| Opium | 6 | 6 | 5 | 6 | 7 | 8 |
| Poppy straw and concentrate of poppy straw | 120 | 172 | 195 | 220 | 243 | 267 |
| (2) Total demand for opiate raw materials | 126 | 178 | 200 | 226 | 250 | 275 |
| (3) Total demand for opiates for medical and scientific purposes^f | 69 | 100 | 96 | 107 | 120 | 130 |
| Balance (1) minus (2) | 52 | 63 | 12 | 49 | 47 | 100 |
| Balance (1) minus (3) | 109 | 141 | 116 | 168 | 177 | 245 |
| Stocks | | | | | | |
| Opium | 8 | 8 | 8 | 11 | .. | .. |
| Poppy straw | 81 | 118 | 88 | 85 | .. | .. |
| Concentrate of poppy straw | 41 | 44 | 82 | 83 | .. | .. |
| Total stocks of opiate raw materials | 130 | 170 | 178 | 179 | 226 | 326 |
| Total stocks of all opiates | 133 | 157 | 172 | 196 | .. | .. |

Note: Two dots (..) indicate that data are not available.

^aFor the balance between supply (stocks and production) of and demand for opiate raw materials rich in thebaine, see paragraph 25 below.

^bFigures for 2012 (*in italics*) are based on advance data submitted by Governments to the International Narcotics Control Board.

^cFigures for 2013 (*in italics*) are based on estimates submitted by Governments to the International Narcotics Control Board.

^dIn France and Spain, large quantities of thebaine alkaloid are extracted from poppy straw rich in morphine in addition to those derived from poppy straw rich in thebaine.

^eEstimated by the secretariat of the International Narcotics Control Board.

^fExcluding demand for substances not controlled under the 1961 Convention as amended by the 1972 Protocol.

14. Production of thebaine-rich materials in 2013 is expected to increase further, reaching about 375 tons. This will be due mainly to an increase in production in Australia and a return in Spain to previous levels of production. As in previous years, the actual production of opiate raw materials in 2013 may differ considerably from the estimates, depending on weather and other conditions.

Global stocks of opiate raw materials and of opiates derived from them

15. As shown in table 2, stocks of opiate raw materials rich in morphine (poppy straw, concentrate of poppy straw and opium) amounted to about 493 tons in morphine equivalent at the end of 2011. Those stocks were sufficient to cover 14 months of expected global demand at the 2012 level of demand. In 2011, Turkey continued to be the country with the largest stocks of opiate raw materials (170 tons in morphine equivalent, in the form of poppy straw and concentrate of poppy straw), followed by India (92 tons in morphine equivalent, in the form of opium), France (63 tons), Spain (46 tons) and the United States (35 tons). Those five countries together accounted for 82 per cent of global stocks of opiate raw materials rich in morphine. The remaining stocks were held in other producing countries and in countries importing opiate raw materials.

16. Stocks of opiate raw materials rich in thebaine (poppy straw, concentrate of poppy straw and opium) increased to about 179 tons in thebaine equivalent by the end of 2011. Those stocks are sufficient to cover the expected global demand in 2012 for about nine months (see table 3). Australia, India, Spain and the United States together accounted for about 86 per cent of the world total in 2011, while the countries importing those raw materials held the remaining stocks.

17. Global stocks of opiates based on morphine, mainly in the form of codeine and morphine, held at the end of 2011 (369 tons in morphine equivalent) were sufficient to cover global demand for those opiates for 11 months, even without additional opiates being manufactured from opiate raw materials. On the basis of data reported by Governments, total stocks of both opiates and opiate raw materials are fully sufficient to cover demand for opiates.

18. Global stocks of opiates based on thebaine (oxycodone, thebaine and a small quantity of oxymorphone) have increased significantly in recent years, although with fluctuations. At the end of 2011, those stocks stood at 196 tons in thebaine equivalent and were sufficient to cover global demand for such opiates for about 20 months.

Demand for opiates

19. As described below, INCB measures demand for opiates in two ways: (a) in terms of the utilization of opiate raw materials, in order to reflect the demand by manufacturers, and (b) in terms of global consumption of all opiates controlled under the 1961 Convention.⁶

Demand for opiate raw materials by manufacturers measured as utilization of raw materials

20. Global demand by manufacturers for opiate raw materials rich in morphine has increased, with fluctuations of an average of about 2 per cent per year since 2000, reaching 413 tons in morphine equivalent in 2011. In 2012 and 2013, global demand for opiate raw materials rich in morphine is expected to increase again: it is anticipated to be about 430 tons in 2012 and 445 tons in 2013.

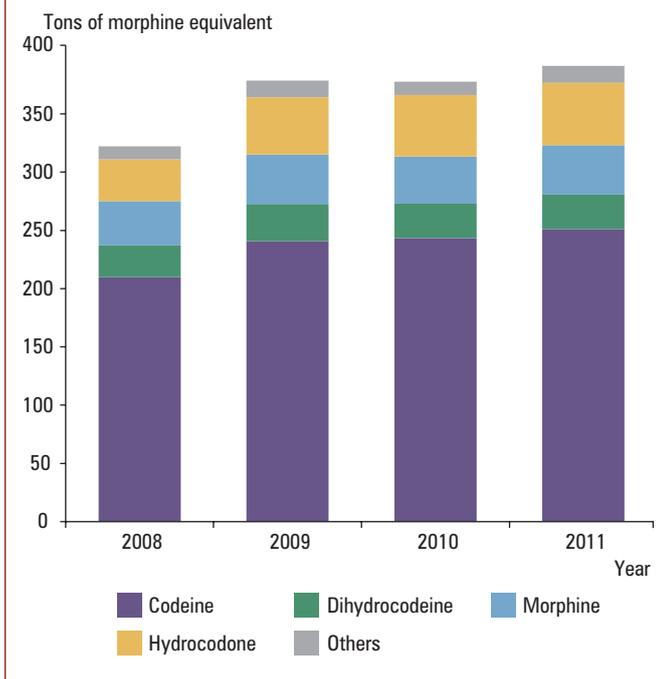
21. Global demand by manufacturers for opiate raw materials rich in thebaine has also been increasing in recent years, albeit also with fluctuations. In 2011, total demand increased significantly to 226 tons of thebaine equivalent. Global demand for raw materials rich in thebaine is expected to rise to about 250 tons of thebaine equivalent in 2012 and reach 275 tons in 2013.

Demand for opiates measured as consumption

22. Figure I presents a breakdown of the demand in terms of consumption for morphine-based opiates, expressed in morphine equivalent, for the main narcotic drugs. Global demand for morphine-based opiates has continued to increase, with some fluctuations. In 2011, global demand for morphine-based opiates used for medical and scientific purposes amounted to 391 tons. That demand is expected to increase moderately, and as a result, global demand for opiates based on morphine may reach 400 tons in 2012 and 410 tons in 2013.

⁶Prior to 2003, INCB measured the global demand only by global consumption of major opiates controlled under the 1961 Convention, expressed in morphine equivalent. However, by using that approximation the following were excluded: (a) demand for less commonly used narcotic drugs; (b) demand for substances that are not controlled under the 1961 Convention but are manufactured from opiate raw materials and for the consumption of which data are not available to INCB; and (c) fluctuations in the utilization of raw materials due to developments in the market anticipated by the manufacturers, such as expectations of sales of opiates, expected changes in prices of raw materials or opiates and so on.

Figure I. Consumption of opiates manufactured from morphine, in tons of morphine equivalent, 2008-2011



23. Demand for thebaine-based opiates, which is concentrated mainly in the United States and which has increased sharply since the late 1990s, increased in 2011 to 107 tons. It is likely to rise in future years, partly because the consumption of such opiates is expected to spread to other countries. Global demand is anticipated to reach approximately 120 tons of thebaine equivalent in 2012 and 130 tons in 2013.

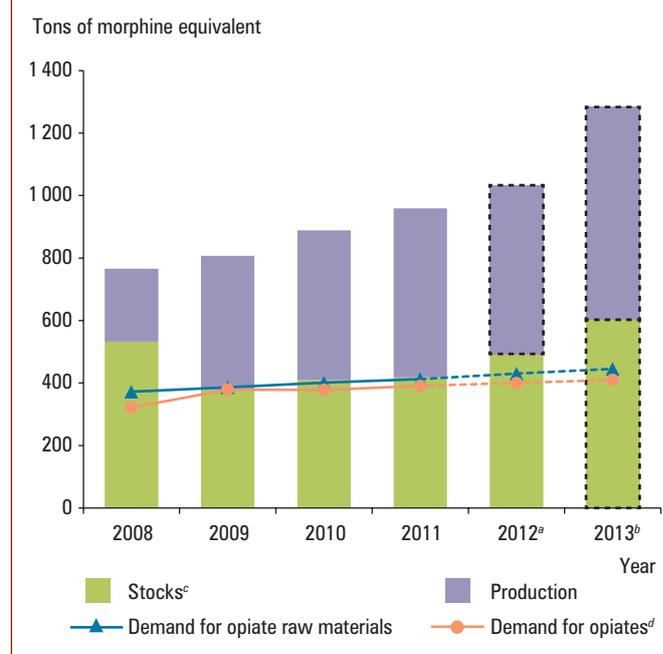
Balance between the supply of and demand for opiate raw materials

24. While global production of opiate raw materials rich in morphine was lower than global demand for those raw materials in the period 2006-2008, production exceeded demand from 2009 to 2011. As a result, stocks increased and at the end of 2011 stood at about 493 tons, sufficient to cover the expected global demand for 14 months (see figure II).⁷ In 2012, global production of opiate raw materials rich in morphine is expected to exceed global demand again, with the result that global stocks of those raw materials will further increase in 2012. Stocks were expected to reach 603 tons by the end of 2012, which is equivalent to about 16 months of expected global demand at the 2013 level of demand. For 2013, producing countries

⁷Because of a change in format, figures II and III are not directly comparable with the figures that appeared as figures II and III in editions of this technical publication before 2008.

plan to increase production. Stocks are anticipated to reach about 838 tons at the end of 2013, sufficient to cover almost 22 months of expected global demand at the 2014 level.⁸ The global supply of opiate raw materials rich in morphine (stocks and production) will remain fully sufficient to cover global demand.

Figure II. Supply of and demand for opiate raw materials rich in morphine, in tons of morphine equivalent, 2008-2013



^aData for production and demand for 2012 are based on advance data (*dotted line*) submitted by Governments.

^bData for 2013 are based on estimates (*dotted line*) submitted by Governments.

^cStocks as at 1 January of each year.

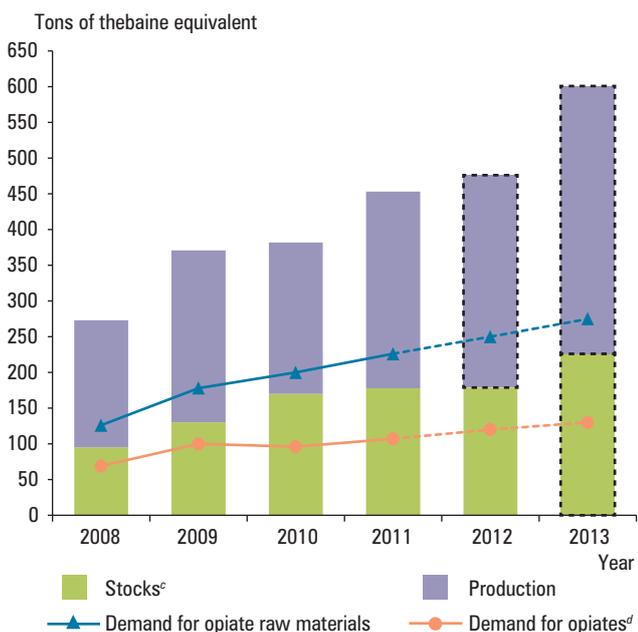
^dExcluding substances not controlled under the 1961 Convention as amended by the 1972 Protocol.

25. In 2011, global production of opiate raw materials rich in thebaine was again higher than demand, leading to a slight increase in stocks (to 179 tons) at the end of 2011, equivalent to global demand for nine months (see figure III). Production is expected to increase in 2012 and to grow further in 2013. By the end of 2012, global stocks of opiate raw materials rich in thebaine are likely to reach 226 tons, sufficient to cover global demand for 10 months, and at the end of 2013 reach 326 tons, sufficient to cover global demand for about 13 months.⁹ The global supply of opiate raw materials rich in thebaine (stocks and production) will be fully sufficient to cover global demand in 2012 and 2013.

⁸The preliminary projection of the Board for global demand in 2014 is about 460 tons.

⁹The Board's preliminary projection of global demand for 2014 is about 300 tons.

Figure III. Supply of and demand for opiate raw materials rich in thebaine, in tons of thebaine equivalent, 2008-2013



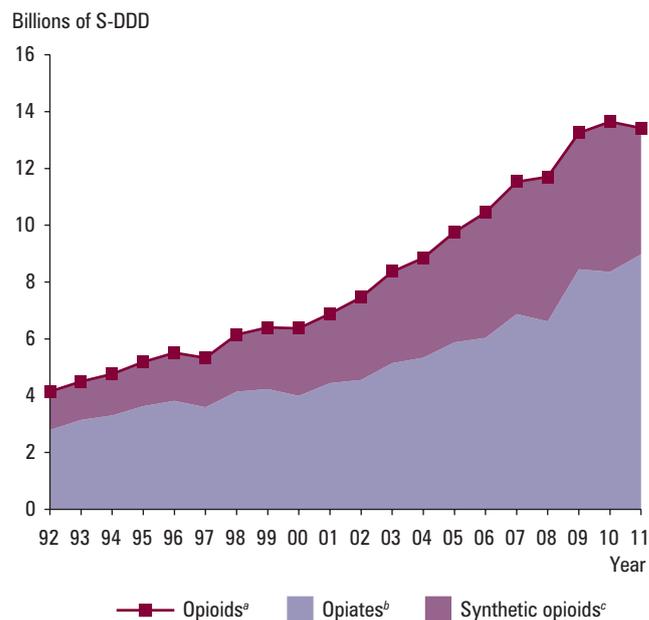
^aData for production and demand for 2012 are based on advance data (dotted line) submitted by Governments.

^bData for 2013 are based on estimates (dotted line) submitted by Governments.

^cStocks as at 1 January of each year.

^dExcluding substances not controlled under the 1961 Convention as amended by the 1972 Protocol.

Figure IV. Global consumption of opioids,^a in billions of defined daily doses for statistical purposes (S-DDD), 1992-2011



^aOpioids: opiates and synthetic opioids.

^bIncluding buprenorphine, an opiate controlled under the Convention on Psychotropic Substances of 1971.

^cIncluding pentazocine, a synthetic opioid controlled under the Convention on Psychotropic Substances of 1971.

Trends in consumption levels of opioids

26. Figure IV presents the global consumption levels of opiates and synthetic opioids over the 20-year period from 1992 to 2011. The figure reflects data including buprenorphine and pentazocine, which are opioids controlled under the Convention on Psychotropic Substances of 1971.¹⁰ To allow the aggregation of consumption data for substances having different potencies, the consumption levels are expressed in billions of defined daily doses for statistical purposes (S-DDD).¹¹

27. The global consumption of opioids more than tripled during the period under consideration. The share of consumption of opiates in the total consumption of opioids declined from 67 per cent in 1992 to 57 per cent in 2008 but rose again to 67 per cent in 2011. As a result, the share of synthetic opioids, which are used for the same indications as opiates, increased from 33 per cent in 1992 to 43 per cent in 2008 but declined to 33 per cent in 2011. Throughout the period, the supply of opiate raw materials

from which opiates were obtained was sufficient to cover the increasing demand. It is expected that the demand for opiates will increase again in the future, while their share in the total consumption of opioids may decline, owing to the expected faster growth in the consumption of synthetic opioids.

¹⁰United Nations, *Treaty Series*, vol. 1019, No. 14956.

¹¹See the explanatory notes to tables XIV.1-XIV.3 for an explanation of defined daily doses for statistical purposes and for the method used to calculate those consumption levels; see also table XIV.3 for further details on developments in consumption levels.