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 1961 as amended by the 1972 Protocol[1] 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. The cultivation of opium poppy rich in codeine is reported separately for two countries in table 1, but in the global calculation of supply and demand it is included in table 2, together with opium poppy rich in morphine, pending the development of a system for the calculation of codeine equivalency. 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. 23 below). Data concerning total consumption (including global use for Schedule III preparations) and stocks of opiates are also included, as appropriate. Utilization of controlled opioids for the manufacture of non-controlled drugs is not included in the analysis.

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 part two above). The main focus of the analysis is on the last four years for which statistical data are available (2012 to 2015). For 2016 and 2017, 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, taking into account relevant estimates furnished by Governments.

4. Finally, INCB examines the trends in global consumption of all opiates and synthetic opioids over the 20-year period from 1996 to 2015. This analysis provides a historical perspective on 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, thebaine and codeine are listed separately, where applicable. For all types of raw materials, the estimated area of cultivation is given for each year that is available. Data on the area sown and the area actually harvested are given for the years for which such data are available.

Morphine

6. In 2015, the area sown with opium poppy rich in morphine in major producing countries decreased from the levels of the previous year in Australia, France, Hungary and Spain but increased in Turkey. In Turkey, the actual area harvested more than doubled in 2015, while it decreased by about 4 per cent in Australia, 7 per cent in France and 5 per cent in Hungary compared with the previous year. The actual area harvested of opium poppy rich in morphine in Spain was 66 per cent less than the previous year. India is the only opium-producing country included in the present analysis. After reducing its cultivation of opium poppy by 75 per cent in 2013, India maintained almost the same level in 2014 and 2015 with an actual area harvested of 5,422 hectares in 2015. The total area of opium poppy rich in morphine sown in major producing countries was 76 per cent of the total estimated area.

[1] United Nations, *Treaty Series*, vol. 976, No. 14152.

[2] The analysis excludes data on China and the Democratic People's 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 the Islamic Republic of Iran and on the demand for opiates derived from such opium.

[3] Those 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, opium poppy rich in thebaine and opium poppy rich in codeine, 2012-2017

(Estimated area, as confirmed by the International Narcotics Control Board, area sown and area harvested, in hectares)

	2012	*2013*	*2014*	2015	*2016*[a]	*2017*[b]
Australia						
Opium poppy rich in morphine						
Estimated area	15 960	11 100	11 008	15 080	*11 410*	*8 160*
Area sown	11 194	12 407	8 890	8 509	*8 348*	
Actual area harvested	8 352	11 484	7 210	6 947	*7 403*	
Opium poppy rich in thebaine						
Estimated area	12 390	12 000	17 600	9 700	*7 375*	*4 650*
Area sown	12 191	16 139	14 015	9 867	*4 491*	
Actual area harvested	11 559	15 399	12 135	9 104	*4 054*	
Opium poppy rich in codeine[c]						
Estimated area	—	—	2 900	5 220	*662*	*1 210*
Area sown	—	—	2 549	4 652	*712*	
Actual area harvested	—	—	2 117	4 447	*688*	
Opium poppy rich in morphine, thebaine and codeine						
Total estimated area	**28 350**	**23 100**	**31 508**	**30 000**	***19 447***	***14 020***
Total area sown	**23 385**	**28 546**	**25 454**	**24 028**	***13 551***	
Total actual area harvested	**19 911**	**26 883**	**21 462**	**20 498**	***12 145***	
France						
Opium poppy rich in morphine						
Estimated area	11 000	11 000	11 000	8 700	*5 895*	*5 490*
Area sown	8 960	10 625	9 900	8 827	*7 140*	
Actual area harvested	8 680	10 209	9 060	8 450	*6 780*	
Opium poppy rich in thebaine						
Estimated area	2 000	2 000	2 000	—	*945*	*2 230*
Area sown	1 210	900	950	—	*1 837*	
Actual area harvested	1 190	741	908	—	*1 820*	
Opium poppy rich in codeine[c]						
Estimated area	—	—	2 050	3 000	*3 500*	—
Area sown	—	—	2 050	2 994	*1 113*	
Actual area harvested	—	—	1 859	2 827	*875*	
Opium poppy rich in morphine, thebaine and codeine						
Total estimated area	**13 000**	**13 000**	**15 050**	**11 700**	***10 340***	***7 720***
Total area sown	**10 170**	**11 525**	**12 900**	**11 821**	***10 090***	
Total actual area harvested	**9 870**	**10 950**	**11 827**	**11 277**	***9 475***	
Hungary						
Opium poppy rich in morphine						
Estimated area	9 500	11 800	8 500	11 000	*7 300*	*13 800*
Area sown	10 005	7 008	6 534	6 085	*5 600*	
Actual area harvested	3 929	2 600	5 560	5 302	*3 530*	
Opium poppy rich in thebaine						
Estimated area	3 000	5 100	—	2 500	*2 500*	*400*
Area sown	3 351	3 252	—	24	*20*	
Actual area harvested	911	1 300	—	24	*20*	

Table 1. (*continued*)

	2012	2013	2014	2015	2016[a]	2017[b]
Opium poppy rich in morphine and thebaine						
Total estimated area	**12 500**	**16 900**	**8 500**	**13 500**	***9 800***	***14 200***
Total area sown	**13 356**	**10 260**	**6 534**	**6 109**	***5 620***	
Total actual area harvested	**4 840**	**3 900**	**5 560**	**5 326**	***3 550***	
India						
Opium poppy rich in morphine						
Total estimated area	**21 220**	**5 240**	**5 893**	**16 000**	***6 900***	***10 900***
Total area sown	**16 021**	**5 859**	**5 794**	**6 172**	***5 250***	
Total actual area harvested	**12 092**	**5 619**	**5 329**	**5 422**	***1 050***	
Spain						
Opium poppy rich in morphine						
Estimated area	10 000	10 100	9 742	9 790[e]	*10 020*	*9 108*
Area sown	8 762	8 700	8 521	2 867	*7 721*	
Actual area harvested	8 762	8 700	8 521	2 867	*7 721*	
Opium poppy rich in thebaine						
Estimated area	2 000	3 800	4 306	4 551	*5 980*	*4 796*
Area sown	3 572	3 574	5 201	4 518	*4 717*	
Actual area harvested	3 572	3 574	5 201	4 518	*4 717*	
Opium poppy rich in morphine and thebaine						
Total estimated area	**12 000**	**13 900**	**14 048**	**14 341**	***16 000***	***13 904***
Total area sown	**12 334**	**12 274**	**13 722**	**7 385**	***12 438***	
Total actual area harvested	**12 334**	**12 274**	**13 722**	**7 385**	***12 438***	
Turkey						
Opium poppy rich in morphine						
Total estimated area[d]	**70 000**	**70 000**	**70 000**	**70 000**	***70 000***	***73 200***
Total area sown	**37 252**	**36 576**	**39 976**	**66 912**	***52 108***	
Total actual area harvested	**13 511**	**32 277**	**26 621**	**61 591**	***29 922***	

Note: A field shaded in red signifies that the corresponding total estimated area for opium poppy rich in morphine, thebaine and codeine has been exceeded. Figures not based on official reports (form B and form C) are in italics.

[a]Figures for area sown and actual area harvested in 2016 are based on advance data submitted by Governments to the Board.

[b]Figures for 2017 are based on estimates submitted by Governments to the Board.

[c]Figures for the area cultivated with morphine-rich opium poppy in Australia and France include cultivation of an opium poppy variety rich in codeine. After 2014, given the increase in the cultivation of opium poppy rich in codeine, these data are presented separately.

[d]Estimate referring to the maximum area available for cultivation.

7. The advance data for 2016 show a 15 per cent decrease in the total estimated area of opium poppy rich in morphine harvested in major producing countries. This can be attributed to the expected decrease in 2016 in the actual area harvested in France (a decrease of 20 per cent) and Hungary (33 per cent). For 2017, estimates for cultivation of opium poppy rich in morphine will increase relative to 2016 in Hungary, India and Turkey, and decrease in Australia, France and Spain.

Thebaine

8. In 2015, the cultivation of opium poppy rich in thebaine, in terms of actual area harvested, decreased in Australia (by 25 per cent) and Spain (by 13 per cent). France did not cultivate any opium poppy rich in thebaine in 2015. The actual area harvested in Hungary was only 24 hectares after the break in its cultivation in 2014. In 2015, the total area sown in major producing countries was 86 per cent of the total estimated area.

9. In 2016, the cultivation of opium poppy rich in thebaine, measured in terms of area harvested, is expected to decrease in Australia by 55 per cent and stay at the same level in Hungary and Spain. However, France is expected to resume cultivation of that variety of opium poppy in 2016 after a break in 2015. In 2017, Australia, Hungary and Spain are expected to decrease the area used for cultivation, whereas France is expected to increase it. The estimated area for Hungary for 2017 is expected to be 400 hectares.

Codeine

10. The actual area harvested for opium poppy rich in codeine in 2015 more than doubled in Australia and increased 52 per cent in France compared with the previous year. Both Australia and France, being the only countries among the major producers that are cultivating such a variety of opium poppy, are expected to decrease their cultivation in 2016. France did not report any estimate of cultivation of opium poppy rich in codeine for 2017, while Australia is projecting an increase.

Noscapine

11. Recently, an increase in the cultivation of opium poppy rich in noscapine in some producing countries was reported. Noscapine is not under international control. The quantity of opiates under international control that were obtained from the cultivation of this particular variety were included in the analysis of the supply of opiate raw materials and the demand for opiates for medical and scientific purposes. In 2015, Hungary was the only country that reported the cultivation of opium poppy rich in noscapine.[4] The actual area harvested in Hungary in 2015 was 592 hectares. In 2016, the expected area sown of opium poppy rich in noscapine is 370 hectares in France and 1,910 hectares in Hungary. According to the estimates submitted, France is expected to increase its cultivation to 780 hectares and Hungary to 3,300 hectares in 2017.

Production of opiate raw materials

12. 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 2012-2017. As in previous years, the actual production of opiate raw materials in 2016 and 2017 may differ considerably from the estimates, depending on weather and other conditions.

Morphine

13. The total production of morphine-rich opiate raw materials in the main producing countries increased to 586 tons[5] in morphine equivalent in 2015 (see table 2). France was the largest producer in 2015, with 168 tons, followed by Australia, Turkey, India and Spain in descending order. France accounted for 29 per cent of global production in terms of morphine equivalent.

14. Global production of opiate raw materials rich in morphine is expected to be about 566 tons in morphine equivalent in 2016. Of that quantity, poppy straw will account for 561 tons (99 per cent) and opium will account for 5 tons (1 per cent). The main producers in 2016 will be Australia (29 per cent of total production) followed by Spain (28 per cent), France (19 per cent) and Turkey (11 per cent). Those four countries together are expected to account for about 87 per cent of global production of opiate raw materials rich in morphine in 2016.

15. Based on the information submitted by the Governments of the main producing countries in form B for 2017, it is estimated that global production of opiate raw materials rich in morphine will increase to 669 tons in morphine equivalent in 2017, mainly as a result of the increase in the estimates of Hungary, India, Spain and Turkey.

Thebaine

16. In 2015, the global production of opiate raw materials rich in thebaine was 216 tons[6] in thebaine equivalent (see table 3). In 2015, Australia accounted for about 80 per cent of the global total, Spain for 15 per cent, France for 3 per cent and India about 2 per cent. In 2015, production decreased in almost all main producers: Australia (36 per cent), France (50 per cent) and Spain (57 per cent). After a break in cultivation in 2014, Hungary cultivated only 24 hectares in 2015. Thebaine obtained directly from opium in India increased slightly from 3 tons in 2014 to 4 tons in 2015.

17. Global production of opiate raw materials rich in thebaine is expected to increase to about 298 tons in thebaine equivalent in 2016 as a result of the expected increase in Spain and France. Australia, France and Spain are expected to account for about 99 per cent of the global production of opiate raw materials rich in thebaine in 2016.

18. Production of thebaine-rich raw materials in 2017 is expected to increase further to 366 tons. This will mainly result from the expected increase in production in Spain and France (84 and 64 per cent, respectively) as well as the increase in thebaine obtained from opium poppy cultivation in India.

[4] The production of opium poppy rich in noscapine was 257 tons in 2015 in Hungary.

[5] The 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 and in opium poppy rich in codeine whenever appropriate.

[6] The 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.

Table 2. Opiate raw materials rich in morphine: production, demand, balance between the two[a] and stocks, in tons of morphine equivalent, 2012-2017

	2012	2013	2014	2015	2016[b]	2017[c]
Australia						
Production	174	190	176	152	*163*	*152*
France						
Production	92	101	119	168	*109*	*67*
Hungary						
Production	9	7	15	22	*20*	*92*
India						
Production	83	44	31	37	*5*	*50*
Spain						
Production	83	83	87	33	*156*	*167*
Turkey						
Production	14	67	43	98	*65*	*96*
Other countries						
Production	22	24	63	76	*48*	*45*
(1) Total production	**477**	**516**	**534**	**586**	***566***	***669***
Demand for						
Opium	59	57	49	30	*35*[d]	*40*[d]
Poppy straw and concentrate of poppy straw	397	395	422	407	*435*[d]	*440*[d]
(2) Total demand for opiate raw materials	**456**	**452**	**471**	**437**	***470***[d]	***480***[d]
(3) Total demand for opiates for medical and scientific purposes[e]	**415**	**373**	**416**	**410**	***420***[d]	***420***[d]
Balance, (1) minus (2)	**21**	**64**	**63**	**149**	***96***[d]	***189***[d]
Balance, (1) minus (3)	**62**	**143**	**118**	**176**	***146***[d]	***249***[d]
Stocks of						
Opium	132	97	77	77	. .	. .
Poppy straw	241	321	277	484	. .	. .
Concentrate of poppy straw	110	128	141	185	. .	. .
Total stocks of opiate raw materials	**483**	**546**	**495**	**746**	***842***	***1 031***
Total stocks of all opiates	**428**	**509**	**574**	**558**	***. .***	***. .***

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

[a]For more information about the balance between supply (stocks and production) of and demand for opiate raw materials rich in morphine, see para. 28.

[b]Figures for 2016 are based on advance data submitted by Governments to the Board.

[c]Figures for 2017 are based on estimates submitted by Governments to the Board.

[d]Estimated by the secretariat of the Board.

[e]Excluding demand for substances not covered by the 1961 Convention as amended by the 1972 Protocol.

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

Morphine

19. As shown in table 2, stocks of opiate raw materials rich in morphine (poppy straw, concentrate of poppy straw and opium) amounted to about 746 tons in morphine equivalent at the end of 2015. Those stocks were considered to be sufficient to cover 19 months of expected global demand by manufacturers at the 2016 level of demand. In 2015, France was the country with the largest stocks of opiate raw materials (184 tons in morphine equivalent, mainly in the form of poppy straw and concentrate of poppy straw), followed by Australia (105 tons), the United Kingdom (96 tons), Spain (92 tons), Turkey (82 tons), India (69 tons, all in the form of opium), the United States (42 tons) and Slovakia (41 tons). Those eight countries together accounted for 95 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.

Table 3. Opiate raw materials rich in thebaine: production, demand, balance between the two[a] and stocks, in tons of thebaine equivalent, 2012-2017

	2012	2013	2014	2015	2016[b]	2017[c]
Australia						
Production	231	312	268	*172*	*173*	*133*
France[d]						
Production	14	9	12	6	*22*	*36*
Hungary						
Production	3	4	2	0	*1*	*7*
Spain[d]						
Production	31	34	77	33	*100*	*184*
India						
Thebaine extracted from opium	8	4	3	4	*1*	*5*
Other countries						
Thebaine extracted from poppy straw (M)	1	1	1	1	*1*	*1*
(1) Total production	**288**	**364**	**363**	**216**	***298***	***366***
Demand for						
Opium	6	6	5	3	*6*[e]	*6*[e]
Poppy straw and concentrate of poppy straw	255	229	197	180	*204*[e]	*214*[e]
(2) Total demand for opiate raw materials	**261**	**235**	**202**	**183**	***210***[e]	***220***[e]
(3) Total demand for opiates for medical and scientific purposes[f]	**124**	**108**	**151**	**151**	***160***[e]	***170***[e]
Balance, (1) minus (2)	**27**	**129**	**161**	**33**	***88***[e]	***146***[e]
Balance, (1) minus (3)	**164**	**256**	**212**	**65**	***138***[e]	***196***[e]
Stocks						
Opium	13	10	8	8	. .	. .
Poppy straw	81	160	127	112	. .	. .
Concentrate of poppy straw	89	95	152	154	. .	. .
Total stocks of opiate raw materials	**183**	**265**	**287**	**274**	***362***	***508***
Total stocks of all opiates	**225**	**233**	**225**	**241**	**. .**	**. .**

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

[a]For more information about the balance between supply (stocks and production) of and demand for opiate raw materials rich in thebaine, see para. 29.

[b]Figures for 2016 are based on advance data submitted by Governments to the Board.

[c]Figures for 2017 are based on estimates submitted by Governments to the Board.

[d]In 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.

[e]Estimated by the secretariat of the Board.

[f]Excluding demand for substances not covered by the 1961 Convention as amended by the 1972 Protocol.

20. Global stocks of opiates based on morphine-rich raw materials, mainly in the form of codeine and morphine, held at the end of 2015 (558 tons in morphine equivalent) were sufficient to cover global demand for those opiates for about 16 months. On the basis of data reported by Governments, total stocks of both opiates and opiate raw materials are fully sufficient to cover demand for medical and scientific purposes for morphine-based opiates.

Thebaine

21. Stocks of opiate raw materials rich in thebaine (poppy straw, concentrate of poppy straw and opium) decreased to about 274 tons in thebaine equivalent by the end of 2015. Those stocks are sufficient to cover the expected global demand by manufacturers in 2016 for about 16 months (see table 3). Australia and the United States

accounted for about 83 per cent of the world total in 2015, while countries with lower production levels and countries importing those raw materials held the remaining stocks.

22. Global stocks of opiates based on thebaine-rich raw material (oxycodone, thebaine and a small quantity of oxymorphone) increased to 241 tons in thebaine equivalent at the end of 2015 and were sufficient to cover global demand for medical and scientific purposes for thebaine-based opiates for about 18 months.

Demand for opiates

23. 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 for medical and scientific purposes.[7]

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

24. In 2015, global demand for opiate raw materials rich in morphine decreased to 437 tons in morphine equivalent because of the decrease in demand for opium and poppy straw. However, it is expected to increase again in 2016 and 2017 to 470 and 480 tons, respectively.

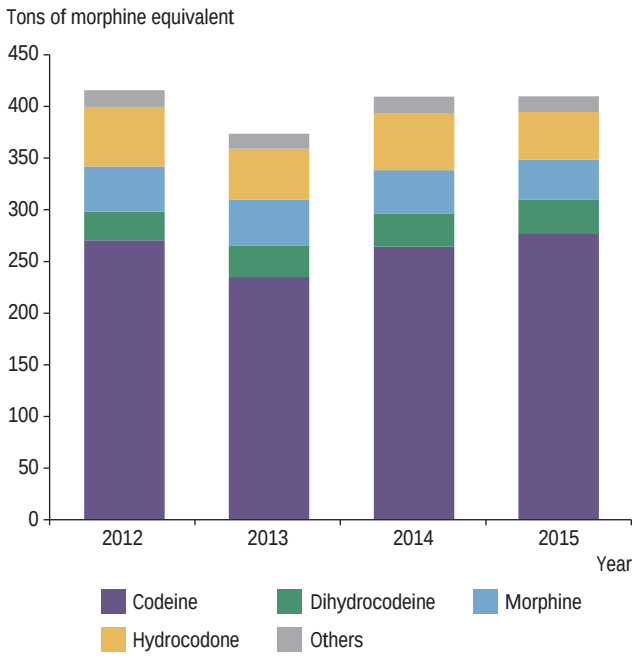
25. Global demand by manufacturers for opiate raw materials rich in thebaine has been decreasing since 2012, probably as a result of restrictions on prescription drugs introduced in the United States, the main market. Total demand continued to decrease, from 202 tons of thebaine equivalent in 2014 to 183 tons in 2015. Global demand for raw materials rich in thebaine is expected to amount to 210 tons of thebaine equivalent in 2016 and increase further to 220 tons in 2017.

Demand for opiates measured as consumption

26. Figure I presents a breakdown of the demand in terms of consumption of morphine-based opiates, expressed in morphine equivalent, for the main narcotic drugs. Codeine and hydrocodone are the most consumed opiates manufactured from morphine. Global demand for morphine-based opiates decreased slightly to 410 tons in morphine equivalent in 2015 from 416 tons in 2014.

27. Demand for thebaine-based opiates is concentrated mainly in the United States and has increased sharply since the late 1990s. The global demand for thebaine-based opiates stayed at the same level as the previous year, amounting to 151 tons in 2015. It is likely to rise in future years, partly because the consumption of such opiates is expected to increase in countries other than the United States. Global demand is anticipated to reach approximately 160 tons of thebaine equivalent in 2016 and 170 tons in 2017.

Figure I. Consumption of morphine and of opiates derived from morphine, in tons of morphine equivalent, 2012-2015



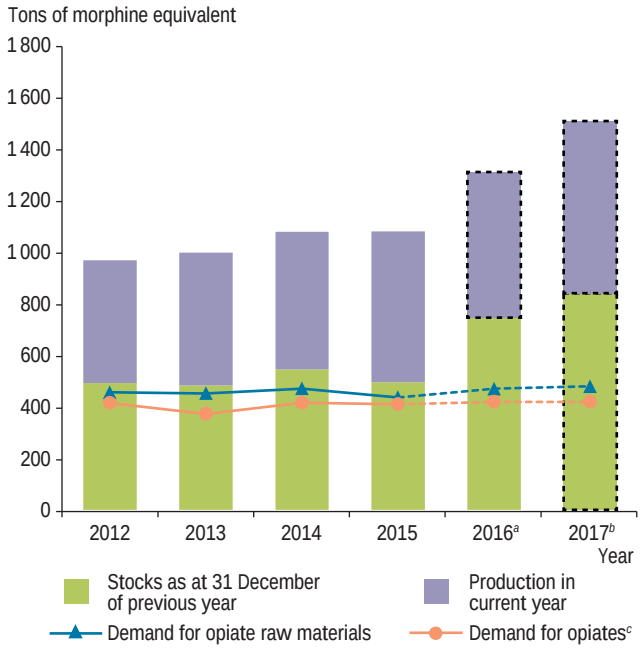
Balance between the supply of and demand for opiate raw materials

Morphine

28. The global production of opiate raw materials rich in morphine has exceeded the global demand for those raw materials since 2009. As a result, stocks have been

[7] Prior 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 II. Supply of and demand for opiate raw materials rich in morphine, in morphine equivalent, 2012-2017

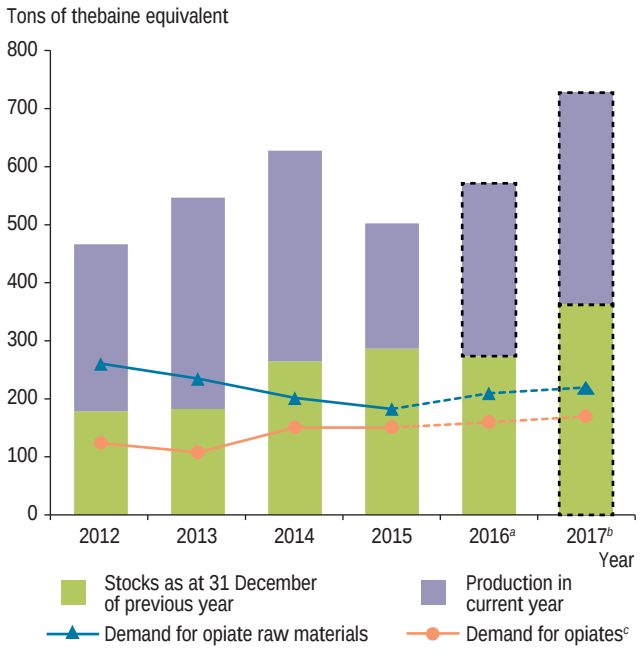


[a]Data for production and demand for 2016 are based on advance data (*dotted line*) submitted by Governments.

[b]Data for 2017 are based on estimates (*dotted line*) submitted by Governments.

[c]Excluding substances not covered by the 1961 Convention as amended by the 1972 Protocol.

Figure III. Supply of and demand for opiate raw materials rich in thebaine, in tons of thebaine equivalent, 2012-2017



[a]Data for production and demand for 2016 are based on advance data (*dotted line*) submitted by Governments.

[b]Data for 2017 are based on estimates (*dotted line*) submitted by Governments.

[c]Excluding substances not covered by the 1961 Convention as amended by the 1972 Protocol.

increasing, albeit with fluctuations. In 2015, stocks increased to 746 tons in morphine equivalent and were sufficient to cover the expected global demand for about 19 months (see figure II).[8] In 2016, 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 2017. Stocks are expected to reach 842 tons by the end of 2016, which is equivalent to about 21 months of expected global demand at the 2017 level of demand (although not all data are available for a complete forecast). For 2017, producing countries have indicated that they plan to increase production. Stocks are anticipated to reach about 1,031 tons at the end of 2017, sufficient to cover more than one year of expected global demand. The global supply of opiate raw materials rich in morphine (stocks and production) will remain fully sufficient to cover global demand.

Thebaine

29. In 2015, global production of opiate raw materials rich in thebaine was again higher than demand. However, the gap between the production and demand got smaller and led to a decrease in stocks (274 tons) at the end of 2015. Those stocks were equivalent to global demand for 16 months (see figure III). Production is expected to increase in 2016 and 2017. By the end of 2016, global stocks of opiate raw materials rich in thebaine will likely reach 362 tons, sufficient to cover global demand for about 20 months, and at the end of 2017 may reach 508 tons, sufficient to cover global demand for more than one year. The global supply of opiate raw materials rich in thebaine (stocks and production) will be more than sufficient to cover global demand in 2016 and 2017.

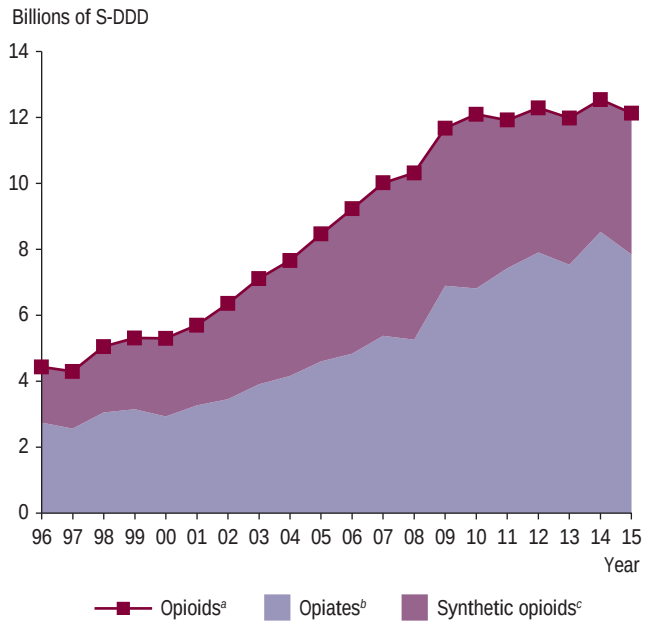
Trends in consumption levels of opioids

30. Figure IV presents the global consumption levels of opiates and synthetic opioids over the 20-year period from 1996 to 2015. The figure reflects data including buprenorphine and pentazocine, which are opioids controlled under the Convention on Psychotropic Substances of 1971.[9] To allow the aggregation of consumption data for substances having different potencies, the

[8]Because 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.

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

Figure IV. Global consumption of opioids,[a] expressed in billions of defined daily doses for statistical purposes (S-DDD), 1996-2015



[a]Opioids: opiates and synthetic opioids.

[b]Including buprenorphine, an opiate controlled under the Convention on Psychotropic Substances of 1971.

[c]Including pentazocine, a synthetic opioid controlled under the Convention on Psychotropic Substances of 1971.

consumption levels are expressed in billions of defined daily doses for statistical purposes.[10]

31. Over the past 20 years, the global consumption of opioids has more than tripled. The share of consumption of opiates in the total consumption of opioids fluctuated from 62 per cent in 1996 to 51 per cent in 2008. After a peak of 68 per cent in 2014, it decreased slightly to 65 per cent in 2015. As a result, the share of synthetic opioids, which are used for the same indications as opiates, increased from 38 per cent in 1996 to 49 per cent in 2008. In 2015, it increased to 35 per cent from 32 per cent in 2014. Between 2012 and 2015, the ratio between the consumption of opiates and synthetic opioids stabilized at about 65 per cent on average for opiates and 35 per cent for synthetic opioids. The overall trend indicates that the demand for opiates is expected to increase in the future, but it is not clear if their share in the total consumption of opioids will increase or decline in relation to the consumption of synthetic opioids.

[10]See the explanatory notes to tables XIV.1.a-i, XIV.2 and 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.