

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 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.¹

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. 22 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 (2013 to 2016). For 2017

and 2018, the data on production are based on advance statistical information and estimates received from the main producing countries,² 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 1997 to 2016. 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 material, 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. Over the last four years, the average estimated area to be cultivated with opium poppy rich in morphine was 119,370 ha; however, both the actual area sown and the actual area harvested have historically tended to be smaller than estimates. In the period 2013–2016, the actual area sown was, on average, 72 per cent of the estimated area (77 per cent in 2016) and the actual area harvested was, on average, 58 per cent of the estimate (48 per cent in 2016). Furthermore, the actual area harvested was, on average, 80 per cent of the area sown (but only 63 per cent in 2016). There has also tended to be a difference historically between the estimated area and the actual area sown. That

¹The 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.

²Those 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, 2013-2018

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

	2013	2014	2015	2016	2017 ^a	2018 ^b
Australia						
Opium poppy rich in morphine						
Estimated area	11 100	11 008	15 080	11 410	8 160	3 469
Area sown	12 407	8 890	8 509	8 280	3 145	
Actual area harvested	11 484	7 210	6 947	7 293	2 411	
Opium poppy rich in thebaine						
Estimated area	12 000	17 600	9 700	7 375	4 650	7 577
Area sown	16 139	14 015	9 867	6 921	4 661	
Actual area harvested	15 399	12 135	9 104	6 073	4 215	
Opium poppy rich in codeine^c						
Estimated area	—	2 900	5 220	662	1 210	2 849
Area sown	—	2 549	4 652	712	1 022	
Actual area harvested	—	2 117	4 447	687	960	
Opium poppy rich in morphine, thebaine and codeine						
Total estimated area	23 100	31 508	30 000	19 447	14 020	13 895
Total area sown	28 546	25 454	24 028	15 913	8 828	
Total actual area harvested	26 883	21 462	20 498	14 053	7 586	
France						
Opium poppy rich in morphine						
Estimated area	11 000	11 000	8 700	5 895	5 490	5 550
Area sown	10 625	9 900	8 827	7 140	5 014	
Actual area harvested	10 209	9 060	8 450	6 780	4 893	
Opium poppy rich in thebaine						
Estimated area	2 000	2 000	—	945	2 230	2 950
Area sown	900	950	—	1 837	3 378	
Actual area harvested	741	908	—	1 820	3 161	
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	15 050	11 700	10 340	7 720	8 500
Total area sown	11 525	12 900	11 821	10 090	8 392	
Total actual area harvested	10 950	11 827	11 277	9 475	8 054	
Hungary						
Opium poppy rich in morphine						
Estimated area	11 800	8 500	11 000	7 300	13 800	6 800
Area sown	7 008	6 534	6 085	5 500	2 451	
Actual area harvested	2 600	5 560	5 302	3 520	2 003	
Opium poppy rich in thebaine						
Estimated area	5 100	—	2 500	2 500	400	220
Area sown	3 252	—	24	20	20	
Actual area harvested	1 300	—	24	20	10	

Table 1. (continued)

	2013	2014	2015	2016	2017 ^a	2018 ^b
Opium poppy rich in morphine and thebaine						
Total estimated area	16 900	8 500	13 500	9 800	14 200	7 020
Total area sown	10 260	6 534	6 109	5 520	2 471	
Total actual area harvested	3 900	5 560	5 326	3 540	2 023	
India						
Opium poppy rich in morphine						
Total estimated area	5 240	5 893	16 000	6 900	10 900	5 134
Total area sown	5 859	5 794	6 172	6 639	9 704	
Total actual area harvested	5 619	5 329	5 422	557	8 720	
Spain						
Opium poppy rich in morphine						
Estimated area	10 100	9 742	9 790	10 020	9 108	5 182
Area sown	8 700	8 521	2 867	5 694	5 677	
Actual area harvested	8 700	8 521	2 867	5 694	5 584	
Opium poppy rich in thebaine						
Estimated area	3 800	4 306	4 551	5 980	4 796	2 980
Area sown	3 574	5 201	4 518	3 811	3 812	
Actual area harvested	3 574	5 201	4 518	3 811	3 812	
Opium poppy rich in morphine and thebaine						
Total estimated area	13 900	14 048	14 341	16 000	13 904	8 162
Total area sown	12 274	13 722	7 385	9 505	9 489	
Total actual area harvested	12 274	13 722	7 385	9 505	9 396	
Turkey						
Opium poppy rich in morphine						
Total estimated area ^d	70 000	70 000	70 000	70 000	73 200	70 000
Total area sown	36 576	39 976	66 912	52 101	53 553	
Total actual area harvested	32 277	26 621	61 591	29 921	23 717	

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.

^aFigures for area sown and actual area harvested in 2017 are based on advance data submitted by Governments to the Board.

^bFigures for 2018 are based on estimates submitted by Governments to the Board.

^cFigures for the area cultivated with morphine-rich opium poppy in Australia and France include cultivation of an opium poppy variety rich in codeine. As of 2014, given the increase in the cultivation of opium poppy rich in codeine, these data are presented separately.

^dEstimate referring to the maximum area available for cultivation.

difference has remained constant at about 25 per cent and is related to changes in manufacturing companies' requirements. The difference between the area sown and the actual area harvested is related to weather conditions, which in some countries have a considerable impact on how much of the area sown is actually harvested. This was the case in India in 2016, where, although the area sown (6,639 ha) was slightly larger than the previous year, the actual area harvested (557 ha) amounted to only 10 per cent of the previous year, because of bad weather conditions. This in turn affected the total actual area harvested, bringing it down to 63 per cent in relation to the total area sown. In 2016, among the other major producing countries, the actual area harvested with opium poppy rich in morphine

also decreased from the levels of the previous year in France, Hungary and Turkey, but increased in Australia and Spain. In Spain, the actual area harvested almost doubled in 2016, while it decreased by about 51 per cent in Turkey, 34 per cent in Hungary and 20 per cent in France, compared with the previous year. In Australia, the actual area harvested of opium poppy rich in morphine was 5 per cent larger than the previous year. India is the only opium-producing country included in the present analysis.

7. On the basis of the advance data for 2017, it is estimated that the total area harvested of opium poppy rich in morphine in major producing countries will decrease by more than 10 per cent. This can be attributed to an

expected decrease in 2017 in the actual area harvested in those countries, with the exception of India. For 2018, a decrease of about 20 per cent relative to 2017 is estimated for the cultivation of opium poppy rich in morphine.

Thebaine

8. Over the last four years, the average estimated area to be cultivated with opium poppy rich in thebaine was 20,089 hectares. The actual area sown and the actual area harvested have historically tended to be smaller than estimates, but in the case of opium poppy rich in thebaine, the difference has been even greater. In the period 2013–2016, the actual area sown was, on average, 87 per cent of the estimated area (75 per cent in 2016), and the actual area harvested was, on average, 80 per cent of the estimate (70 per cent in 2016). Furthermore, the actual area harvested was, on average, 92 per cent of the actual area sown (93 per cent in 2016). In 2016, the cultivation of opium poppy rich in thebaine, in terms of actual area harvested, decreased in Australia (by 33 per cent) and Spain (by 16 per cent). France resumed its cultivation of opium poppy rich in thebaine in 2016, after a break in the previous year. The actual area harvested in Hungary amounted to only 20 hectares. In 2016, the total area sown in major producing countries amounted to 75 per cent of the total estimated area.

9. In 2017, the cultivation of opium poppy rich in thebaine, measured in terms of area harvested, is expected to decrease in Australia by 31 per cent and to remain at the same level in Hungary and Spain. However, France is expected to continue increasing cultivation of that variety of opium poppy in 2017, after a break in 2015. In 2018, Australia and France are expected to increase the area used for cultivation, whereas Hungary and Spain are expected to decrease it.

Codeine

10. In 2016, the actual area harvested of opium poppy rich in codeine decreased by 85 per cent in Australia and 70 per cent in France, compared with the previous year. In 2017, Australia is expected to increase its cultivation by 40 per cent, whereas France has ceased cultivation of this variety of opium poppy. Australia, the only country among the major producers that is expected to cultivate opium poppy rich in codeine in 2017 and 2018, is projecting an increase in 2018.

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 where it was appropriate. In 2016, France and Hungary were the only countries that reported the cultivation of opium poppy rich in noscapine. The actual area harvested in Hungary was 1,555 hectares, yielding 655 tons in gross weight of poppy straw. France reported the production of 230 tons of opium poppy rich in noscapine from 370 hectares. According to the advance data for 2017, Australia expects to produce 1,487 tons of this variety of opium poppy (to be harvested from an area of 940 ha). The area to be harvested in Hungary in 2017 is expected to be 254 hectares. Australia, France and Hungary are expecting to further increase their cultivation in 2018.

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 2013–2018. As in previous years, the actual production of opiate raw materials in 2017 and 2018 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 decreased to 463 tons³ in morphine equivalent in 2016 from 586 tons in 2015 (see table 2). Australia was the largest producer in 2016, with 180 tons, followed by France, Turkey, Spain, Hungary and India in descending order. Australia accounted for 39 per cent of global production in terms of morphine equivalent.

14. Global production of opiate raw materials rich in morphine is expected to rise again in 2017, to about 577 tons in morphine equivalent; however, actual production has historically tended to be less than estimates. Of that quantity, poppy straw is expected to account for 529 tons (92 per cent) and opium is expected to account for 48 tons (8 per cent). The main producers in 2017 are expected to be Australia (28 per cent of total production), followed by Turkey (28 per cent), Spain (23 per cent) and

³The 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.

Table 2. Opiate raw materials rich in morphine: production, demand, balance between the two^a and stocks, in tons of morphine equivalent, 2013-2018

	2013	2014	2015	2016	2017 ^b	2018 ^c
Australia						
Production	190	176	152	180	163	145
France						
Production	101	119	168	91	60	51
Hungary						
Production	7	15	22	9	10	49
India						
Production	44	31	37	3	48	24
Spain						
Production	83	87	33	56	132	119
Turkey						
Production	67	43	98	63	159	96
Other countries						
Production	24	63	76	61	5	45
(1) Total production	516	534	586	463	577	529
Demand for						
Opium	57	49	30	16	30 ^d	35 ^d
Poppy straw and concentrate of poppy straw	395	422	407	351	430 ^d	435 ^d
(2) Total demand for opiate raw materials	452	471	437	367	460^d	470^d
(3) Total demand for opiates for medical and scientific purposes^e	373	416	410	388	420^d	420^d
Balance, (1) minus (2)	64	63	149	96	117^d	59^d
Balance, (1) minus (3)	143	118	176	75	157^d	109^d
Stocks of						
Opium	97	77	77	43	..	..
Poppy straw	321	277	484	523	..	..
Concentrate of poppy straw	128	141	185	181	..	..
Total stocks of opiate raw materials	546	495	746	747	864	922
Total stocks of all opiates	509	574	558	534	..	..

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

^aFor more information about the balance between supply (stocks and production) of and demand for opiate raw materials rich in morphine, see para. 27.

^bFigures for 2017 are based on advance data submitted by Governments to the Board.

^cFigures for 2018 are based on estimates submitted by Governments to the Board.

^dEstimated by the secretariat of the Board.

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

France (10 per cent). Those four countries together are expected to account for about 89 per cent of global production of opiate raw materials rich in morphine in 2017.

15. On the basis of the information submitted by the Governments of the main producing countries in form B

for 2018, it is estimated that global production of opiate raw materials rich in morphine will decrease to 528 tons in morphine equivalent in 2018, mainly as a result of the decrease in the estimates for Australia, Hungary, India and Spain. Projections for 2018 are likely to be adjusted considerably downward when the actual data become available.

Table 3. Opiate raw materials rich in thebaine: production, demand, balance between the two^a and stocks, in tons of thebaine equivalent, 2013-2018

	2013	2014	2015	2016	2017 ^b	2018 ^c
Australia						
Production	312	268	172	147	173	199
France^d						
Production	9	12	6	5	29	28
Hungary						
Production	4	2	—	—	1	7
Spain^d						
Production	34	77	33	34	83	60
India						
Thebaine extracted from opium	4	3	4	—	5	2
Other countries						
Thebaine extracted from poppy straw (M)	1	1	1	1	1	1
(1) Total production	364	363	216	187	292	297
Demand for						
Opium	6	5	3	2	5 ^e	5 ^e
Poppy straw and concentrate of poppy straw	229	197	180	208	215 ^e	225 ^e
(2) Total demand for opiate raw materials	235	202	183	210	220^e	230^e
(3) Total demand for opiates for medical and scientific purposes^f	108	151	151	133	160^e	170^e
Balance, (1) minus (2)	129	161	33	-23	72^e	67^e
Balance, (1) minus (3)	256	212	65	54	132^e	127^e
Stocks						
Opium	10	8	8	4	..	..
Poppy straw	160	127	112	89	..	..
Concentrate of poppy straw	95	152	154	131	..	..
Total stocks of opiate raw materials	265	287	274	224	296	363
Total stocks of all opiates	233	225	241	242	..	..

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

^aFor more information about the balance between supply (stocks and production) of and demand for opiate raw materials rich in thebaine, see para. 28.

^bFigures for 2017 are based on advance data submitted by Governments to the Board.

^cFigures for 2018 are based on estimates submitted by Governments to the 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 Board.

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

Thebaine

16. In 2016, the global production of opiate raw materials rich in thebaine was 187 tons⁴ in thebaine equivalent (see table 3). In 2016, Australia accounted for about 79 per cent of the global total, Spain for 18 per cent and France for

about 3 per cent. In 2016, production decreased in Australia (15 per cent) and France (17 per cent), whereas it increased in Spain (3 per cent). After a break in cultivation in 2014, Hungary cultivated just 20 hectares in 2016.

17. Global production of opiate raw materials rich in thebaine is expected to increase to about 292 tons in thebaine equivalent in 2017 as a result of the expected increases in all producing countries. Australia, France and

⁴The 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.

Spain are expected to account for about 97 per cent of the global production of opiate raw materials rich in thebaine in 2017. Production of thebaine-rich raw materials in 2018 is expected to increase slightly further, to 297 tons.

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

Morphine

18. As shown in table 2, stocks of opiate raw materials rich in morphine (poppy straw, concentrate of poppy straw and opium) amounted to about 747 tons in morphine equivalent at the end of 2016, nearly the same level as 2015. Those stocks were considered to be sufficient to cover 19 months of expected global demand by manufacturers at the 2017 level of demand. In 2016, France was the country with the largest stocks of opiate raw materials (194 tons in morphine equivalent, mainly in the form of poppy straw and concentrate of poppy straw), followed by Australia (149 tons), Spain (99 tons), Turkey (80 tons), the United Kingdom of Great Britain and Northern Ireland (77 tons), the United States of America (38 tons), India (31 tons, all in the form of opium), Slovakia (30 tons), Belgium (27 tons) and Japan (14 tons). Those 10 countries together accounted for 99 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.

19. Global stocks of opiates based on morphine-rich raw materials, mainly in the form of codeine and morphine, held at the end of 2016 (534 tons in morphine equivalent) were sufficient to cover global demand for those opiates for about 15 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

20. Stocks of opiate raw materials rich in thebaine (poppy straw, concentrate of poppy straw and opium) decreased from 274 tons in thebaine equivalent in 2015 to about 224 tons by the end of 2016. Those stocks are sufficient to cover the expected global demand by manufacturers in 2017 for about 12 months (see table 3). Australia (116 tons), the United States (57 tons), Spain (25 tons) and France (21 tons) accounted for about 98 per cent of the world total in 2016, while countries with lower production levels and countries importing those raw materials held the remaining stocks.

21. Global stocks of opiates based on thebaine-rich raw material (oxycodone, thebaine and a small quantity of oxymorphone) remained stable at 242 tons in thebaine equivalent at the end of 2016 and were sufficient to cover global demand for thebaine-based opiates for medical and scientific purposes for about 18 months.

Demand for opiates

22. 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.⁵

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

23. The global demand for opiate raw materials rich in morphine (in particular opium and poppy straw) has been decreasing since 2014. In 2016, it decreased to 367 tons in morphine equivalent. However, it is expected to increase again in 2017 and 2018 to 460 and 470 tons, respectively.

24. Global demand by manufacturers for opiate raw materials rich in thebaine decreased from 2012 to 2015, but then increased from 183 tons of thebaine equivalent in 2015 to 210 tons in 2016. Global demand for raw materials rich in thebaine is expected to increase further, to 220 tons in thebaine equivalent in 2017, then to 230 tons in 2018.

Demand for opiates measured as consumption

25. 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

⁵Prior 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 morphine and of opiates derived from morphine, in tons of morphine equivalent, 2013-2016

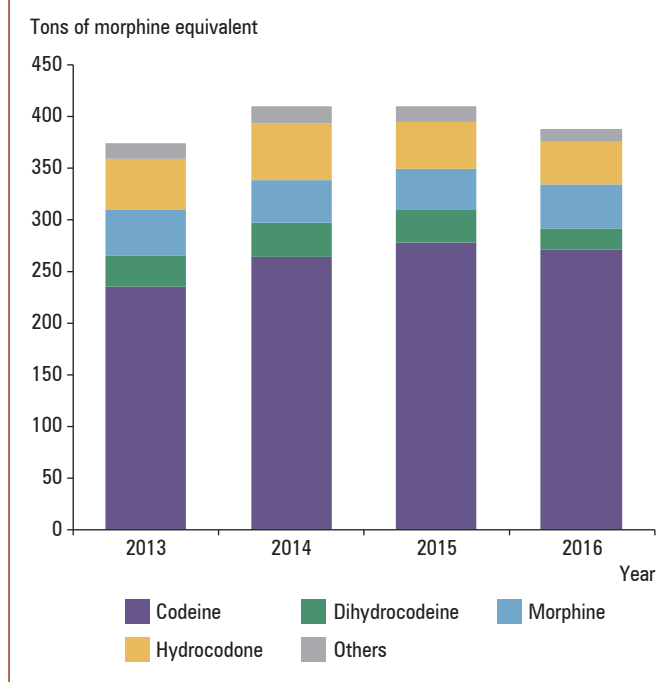
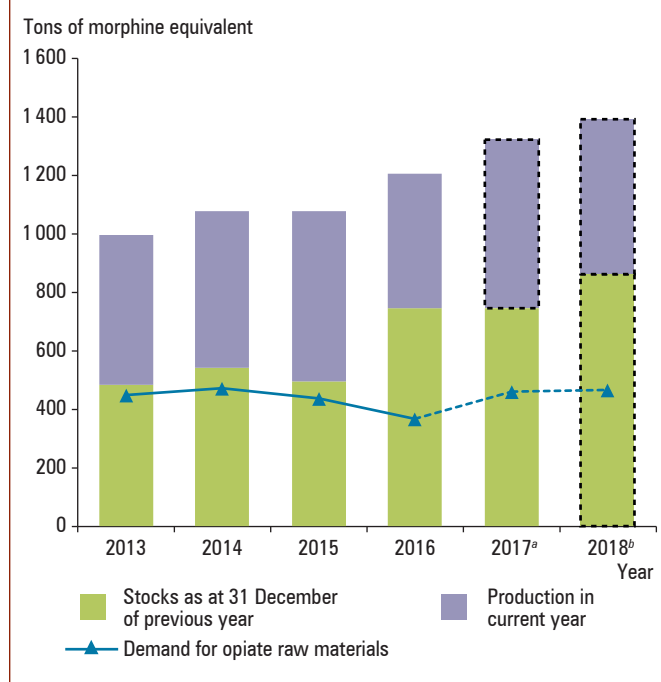


Figure II. Supply of and demand for opiate raw materials rich in morphine, in tons of morphine equivalent, 2013-2018



^aData for production and demand for 2017 are based on advance data (dotted line) submitted by Governments.

^bData for 2018 are based on estimates (dotted line) submitted by Governments.

manufactured from morphine. Global demand for morphine-based opiates decreased to 388 tons in morphine equivalent in 2016 from 410 tons in 2015.

26. 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 decreased from 151 tons in 2015 to 133 tons in 2016. 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 2017 and 170 tons in 2018.

Balance between the supply of and demand for opiate raw materials

Morphine

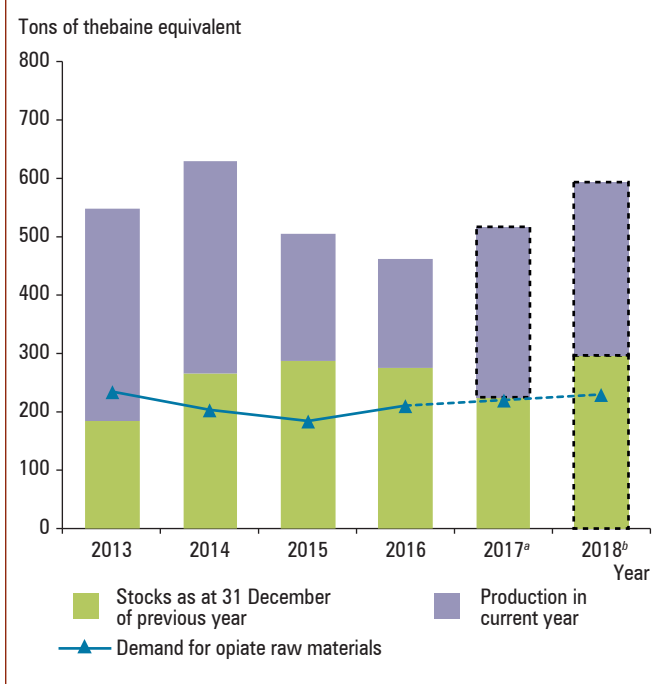
27. The global production of opiate raw materials rich in morphine has exceeded the global demand for those raw materials since 2009. As a result, stocks have been

increasing, with some fluctuations. In 2015, stocks increased to 746 tons in morphine equivalent and in 2016 remained at nearly the same level, 747 tons, which was sufficient to cover the expected global demand for about 19 months (see figure II). In 2017, 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 2018. Stocks are expected to reach 864 tons by the end of 2017, which is equivalent to about 22 months of expected global demand at the 2018 level of demand (although not all data are available for a complete forecast). For 2018, producing countries have indicated that they plan to decrease production. Stocks are anticipated to reach about 922 tons at the end of 2018, 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

28. In 2016, global production of opiate raw materials rich in thebaine (187 tons) was less than demand (210 tons)

Figure III. Supply of and demand for opiate raw materials rich in thebaine, in tons of thebaine equivalent, 2013-2018



^aData for production and demand for 2017 are based on advance data (dotted line) submitted by Governments.

^bData for 2018 are based on estimates (dotted line) submitted by Governments.

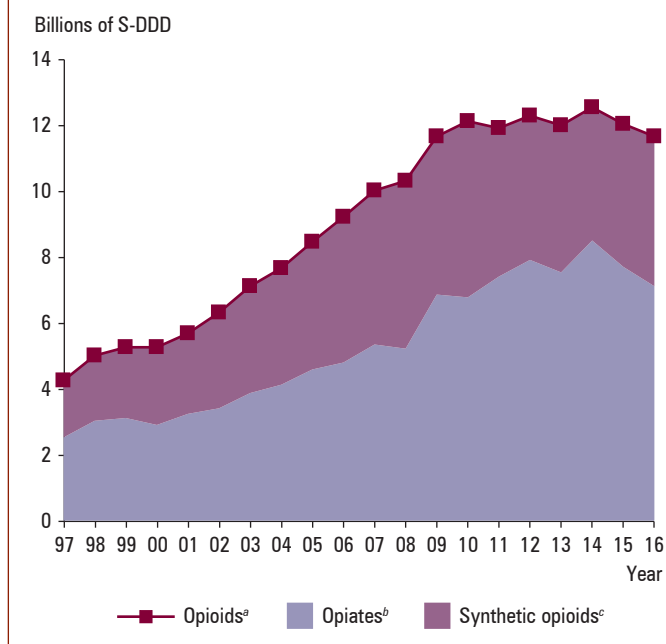
for the first time in the past five years and led to a decrease in stocks (224 tons) at the end of 2016. Those stocks were equivalent to global demand for 12 months (see figure III). Production is expected to increase in 2017 and 2018. By the end of 2017, global stocks of opiate raw materials rich in thebaine are likely to reach 296 tons, sufficient to cover global demand for about 15 months, and at the end of 2018 may reach 363 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 2017 and 2018.

Trends in consumption levels of opioids

29. Figure IV presents the global consumption levels of opiates and synthetic opioids over the 20-year period from 1997 to 2016. The figure reflects data including buprenorphine and pentazocine, which are opioids controlled under the Convention on Psychotropic Substances of 1971.⁶ To allow the aggregation of consumption data for substances

⁶United 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), 1997-2016



^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.

having different potencies, the consumption levels are expressed in billions of defined daily doses for statistical purposes.⁷

30. 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 between 59 per cent in 1997 and 51 per cent in 2008. Since the peak of 68 per cent of total opioids reached in 2014, the consumption of opiates has been decreasing. In 2016, it decreased to 61 per cent. As a result, the share of synthetic opioids, which are used for the same indications as opiates, increased from 32 per cent in 2014 to 39 per cent in 2016. The overall trend indicates that the demand for opiates is expected to increase in the future, but it is not clear if their share of the total consumption of opioids will increase or decline in relation to the consumption of synthetic opioids.

⁷See 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.