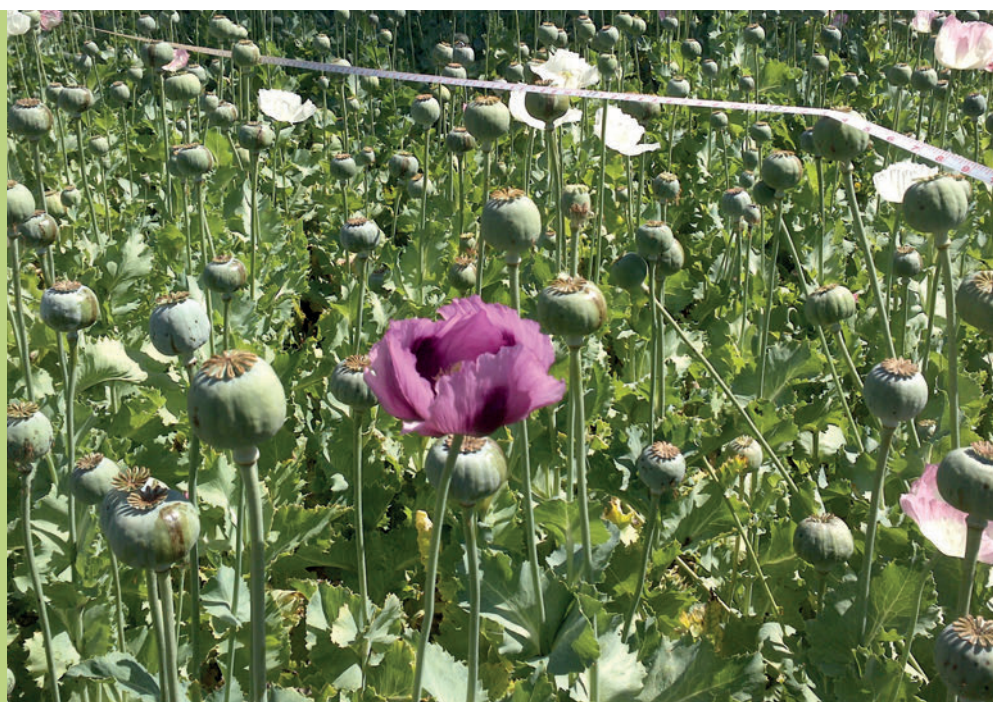




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United Nations Office on Drugs and Crime



Afghanistan Opium Survey 2021

Cultivation and Production

MARCH 2022

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Afghanistan opium survey 2021 – fact sheet

	2020	Change from 2020	2021
Net opium poppy cultivation	224,000 ha (202,000 - 246,000)	-21%	177,000 ha (162,000 - 189,000)
Number of poppy free provinces ¹	12 out of 34	-1	11 out of 34
Number of provinces affected by poppy cultivation	22 out of 34	+1	23 out of 34
Verified eradication ²	NA	NA	42 ha
Average opium yield (weighted by cultivation)	28.0 kg/ha	37%	38.5 kg/ha
Potential production of opium	6,300 tons (5,600 - 7,100)	8%	6,800 tons (6,200 - 7,400)
Potential production of heroin of export quality	350 to 590 tons	9-10%	390 to 650 tons
Average farm-gate price (weighted by production) of fresh opium at harvest time	US\$ 42/kg	33%	US\$ 56/kg
Average farm-gate price (weighted by production) of dry opium at harvest time	US\$ 55/kg	13%	US\$ 62/kg
Farm gate value of opium production	US\$ 350 (300 – 400) million	21%	US\$ 425 (390 – 460) million
Gross value of opiates (exports and domestic consumption) ³	US\$ 1.4 – 2.5 billion	12%	US\$ 1.8 – 2.7 billion

Note: Estimates are rounded, percentage changes have been calculated based on precise figures.

¹ A province is defined as poppy-free when it is estimated to have less than 100 hectares of opium poppy cultivation.

² Area eradicated in the 2021 growing season (March to June 2021).

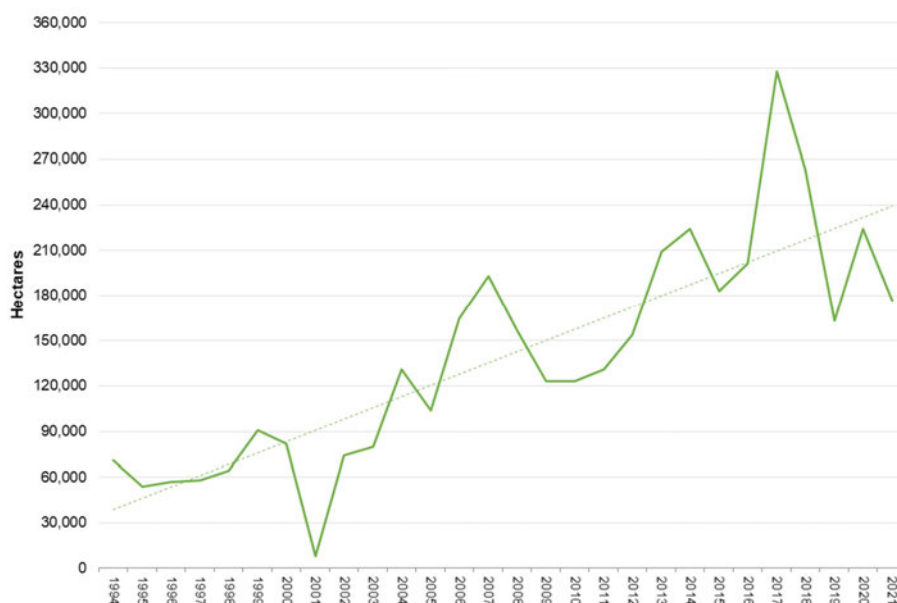
³ The range is constructed based on a number of different assumptions and reflects the uncertainty range around the production estimates. The 2020-2021 percentage change reflects the differences in the mid-points and is to be seen as indicative.

Key Findings

The production of opiates (opium, morphine, and heroin) is arguably Afghanistan's largest illegal economic activity. The gross output of the Afghan illicit opiate economy was estimated to be \$1.8-\$2.7 billion in 2021. The total value of opiates, including domestic consumption and exports, stood at between 9 to 14 per cent of Afghanistan's GDP, exceeding the value of its officially recorded licit exports of goods and services (estimated at 9 per cent of GDP in 2020).

At the end of the annual opium cultivation season in July 2021, the area under opium poppy cultivation in Afghanistan was estimated at 177,000 hectares. This was a 21 per cent decrease from 2020, representing a contraction of 47,000 hectares. Opium poppy cultivation has been increasing steadily over the past two decades, with an average increase of 4,000 hectares each year since systematic monitoring began in 1994 – albeit with strong yearly fluctuations.

Opium poppy cultivation in Afghanistan, 1994-2021 (Hectares)

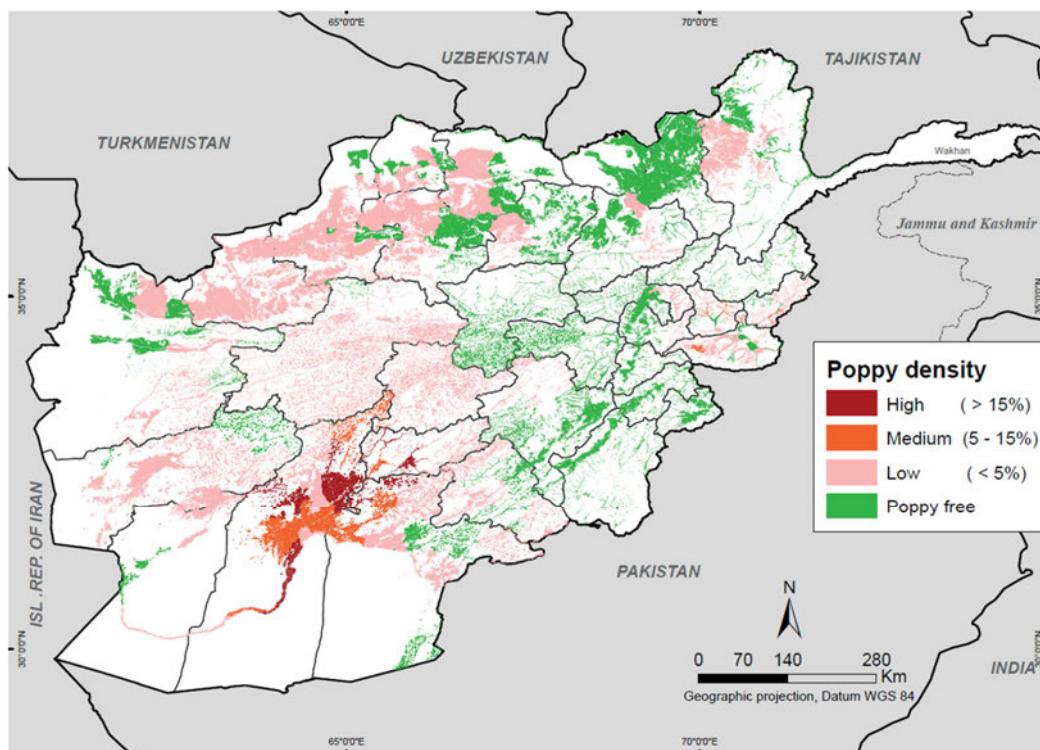


Most of the 2021 opium poppy cultivation took place in the South-western region (79%), followed by the Western region (10%) and Northern region (6%). The Eastern and North-eastern regions accounted for 2% each of total cultivation. The Southern and Central regions together accounted for 0.8% of the total cultivation.

When compared to 2021, opium poppy cultivation decreased by some 18,100 hectares (-50%) in the Western region, by 13,200 hectares (-9%) in the South-western region, by 13,000 hectares (-57%) in the Northern region and by 3,200 hectares (-46%) in the North-eastern region.

Hilmand remained the country's leading opium poppy cultivating province, followed by Kandahar, Farah, Uruzgan, Badghis, Faryab, Badakhshan, Nimroz and Balkh. The number of poppy-free provinces in 2021 decreased from 12 to 11. Samangan province lost its poppy-free status. The number of provinces affected by opium poppy cultivation increased from 22 to 23.

Density of opium poppy cultivation in agricultural land in Afghanistan as proportion of agricultural land used for opium poppy cultivation, 2021



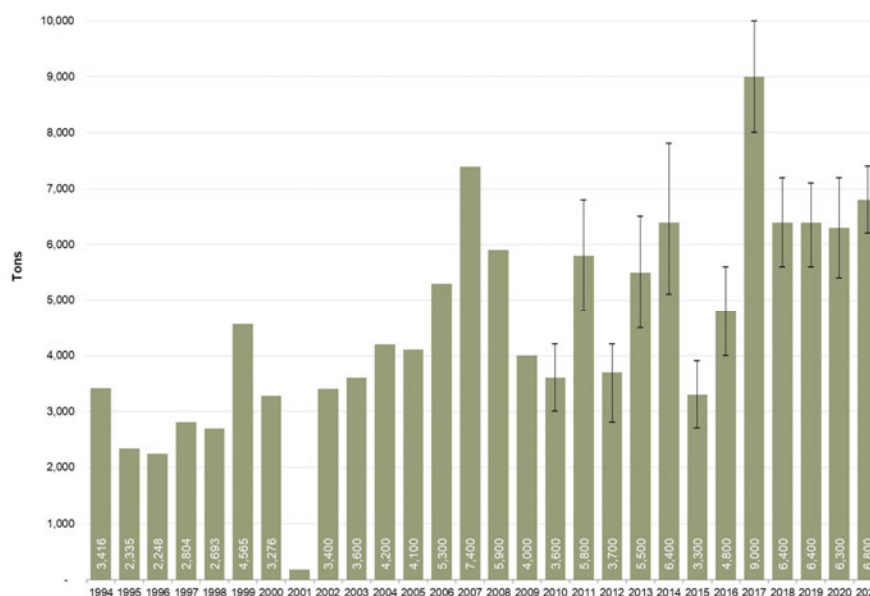
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Potential opium yield and production was estimated at 6,800 tons in 2021

The 2021 decrease in cultivation was offset by an increase in opium yield per hectare. Estimated opium production in 2021 was 6,800 (6,200 - 7,400 tons) or 8 per cent more than in 2020, meaning production has exceeded 6,000 tons for an unprecedented fifth consecutive year. This amount of opium could be converted into some 270 - 320 tons of pure heroin or some 390 to 650 tons of heroin of export quality.

The average opium yield in 2021 was estimated at 38.5 kilograms per hectare. The South-western region continued to produce most of the opium in Afghanistan (82% of national production), followed by the Western and Northern regions (9% and 4%, respectively). The Eastern, Southern, North-eastern and Central regions together accounted for 5%.

Potential opium production in Afghanistan, 1994-2021



Figures refer to oven-dry opium. The vertical lines represent the upper and lower bounds of the 95% confidence interval.

Opium potential production, by region, 2021

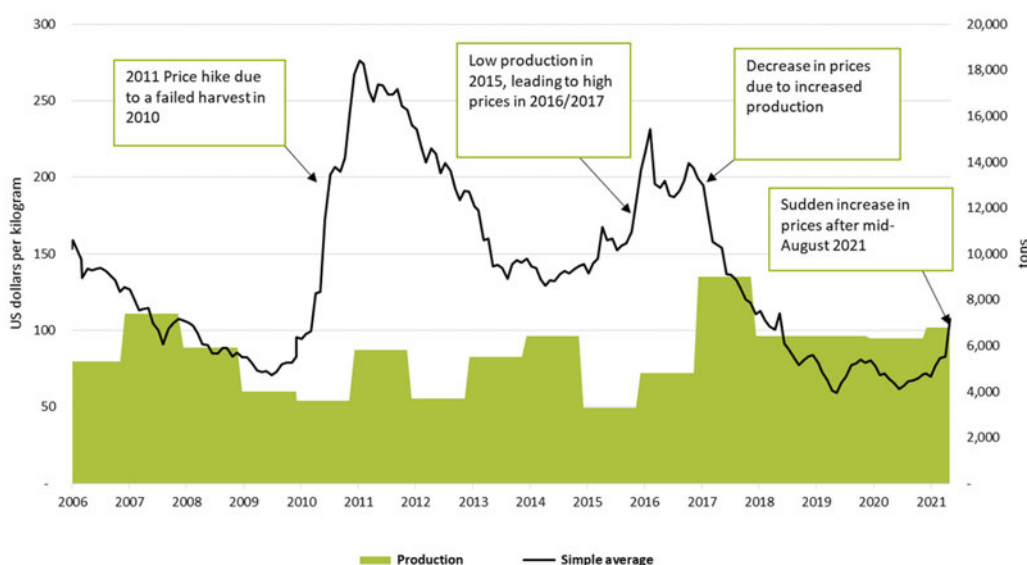
REGION	Production 2020 (tons)	Production 2021 (tons)	% Change
Central	35	43	23%
Eastern	145	146	1%
North	709	256	-64%
North-eastern	229	149	-35%
South	12	5	-58%
South-western	4,479	5,569	24%
Western	667	623	-7%
Weighted national average	6,300	6,800	8%

Opium yield, by region, 2021

Region	2020 average yield (kg/ha)	2021 average yield (kg/ha)	Change (%)
Central	34.8	35.1	1%
Eastern	40.9	39.5	-3%
North	31.0	26.2	-15%
North-eastern	32.3	38.9	21%
South	41.0	39.5	-4%
South-western	29.3	39.8	36%
Western	18.4	34.4	87%
Weighted national average	28.0	38.5	37%

Continuing low opium prices indicate a saturated opium market, reducing the income made from opiate production and trafficking

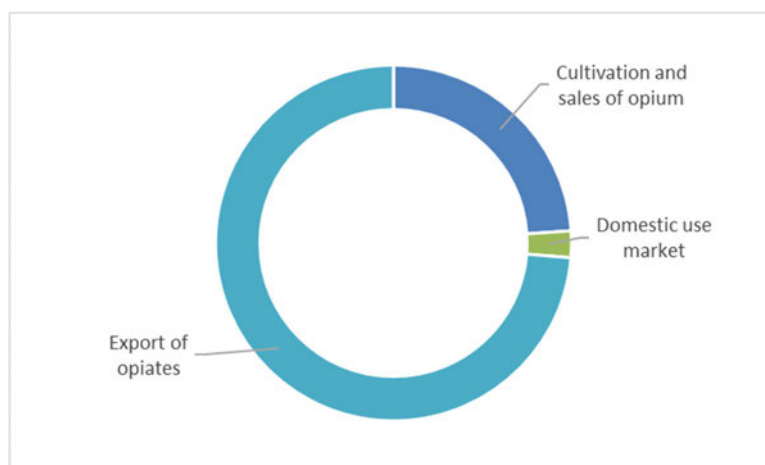
Sustained high levels of production may have saturated the opium market, as average farm-gate prices at the 2021 harvest time remained very low, in spite of an 13% increase of the farm-gate price of dry opium at harvest time, from an average of 55 US\$/kg in 2020 to 63 US\$/kg. Prices below 100 US\$/kg were observed the last time in 2009 (not adjusted for inflation). At US\$ 425 million (390-460 million), equivalent to roughly 2% of Afghanistan's estimated GDP,⁴ the farm-gate value continued to remain at very low levels.

Opium production and average farm-gate prices of opium, 2006–2021

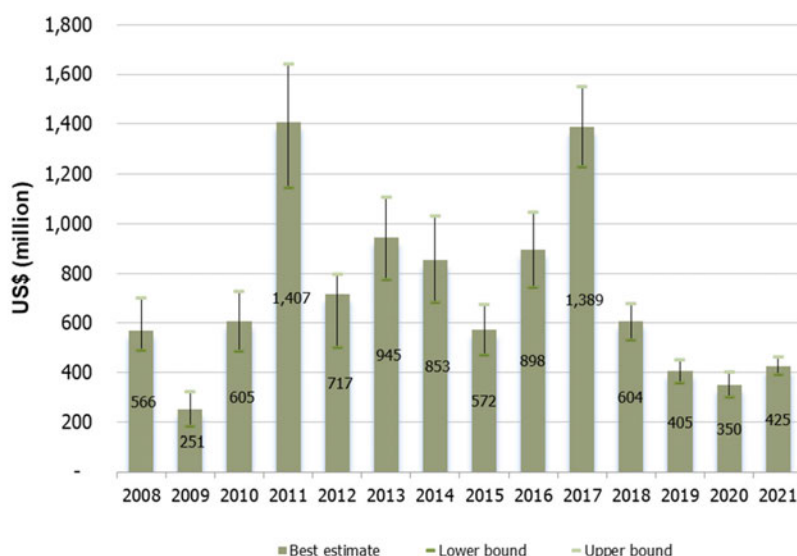
From cultivation and production to local distribution and international trade, all activities related to drug supply chains yield financial benefits for those involved. The largest share of Afghan income from opiates is accrued by the manufacture and international export (\$1.7 to \$2.5 billion in 2021). The domestic use market (\$43 million in 2021) and the income made by farmers (\$425 million in 2021) are much smaller.

⁴ Estimated at USD 19.8 billion for the Afghan year 2020. Source: NSIA Afghanistan Statistical Yearbook 2020. 2020 data was used in absence of updated values for 2021.

Income from opiates in Afghanistan by activity (2021)



Farm-gate value of opium production in Afghanistan without inflation adjustment, 2008-2021



Outlook and future challenges

Afghanistan is in a state of constant crisis, with a precarious economy and wider instability enabling illicit markets. Rapid reductions in international grant support, loss of access to offshore assets, and disruption of financial linkages following August 2021 are expected to lead to a major contraction of the economy, increasing poverty, and macroeconomic instability.⁵ Up to 97 per cent of the population is at risk of sinking below the poverty line.⁶ This extreme situation comes after the COVID-19 pandemic and a string of atypical weather years, with severe drought being followed by high seasonal floods. Even before these difficulties, roughly 18 million Afghans – almost half of the population – needed aid. More than 550,000 people have been displaced since January 2021;

⁵ World Bank, “The World Bank in Afghanistan”, 8 October 2021, <https://www.worldbank.org/en/country/afghanistan/overview#1>

⁶ UNDP, “97 per cent of Afghans could plunge into poverty by mid- 2022, says UNDP”, 9 September 2021, <https://www.af.undp.org/content/afghanistan/en/home/presscenter/pressreleases/2021/UNDP-press-release/>

one in three Afghans are experiencing crisis or emergency level of food insecurity, and more than half of children under the age of five have faced acute malnutrition.⁷

The current contraction of licit economic opportunities makes households even more vulnerable to engaging in illicit activities such as opium cultivation, and heroin manufacture and trafficking. The cultivation of opium poppy is driven by many socioeconomic and security-related factors, including multi-dimensional poverty, lack of licit economic opportunities, and limited access to markets. Most of the farmers who cultivate opium poppy live in villages with lower quality infrastructure, and with less advantaged living conditions.

Opium poppy villages tend to have less access than non-poppy villages to functioning public electricity grids, schools, literacy programs, and agricultural cooperatives. In addition, farmers in opium poppy villages have on average 40 per cent less available agricultural land and face 20 per cent longer journeys to markets for selling legal crops, as well as 23 per cent more road closures each year owing to security conditions.⁸ Factors associated with opium poppy cultivation include lower earnings from legal crops, higher number of household members, lower crop and income diversification, and less access to credit. Female-headed households cultivating opium poppy showed even higher levels of insecurity and distrust in the authorities to protect citizens and guard them against corruption than male-headed households.⁹

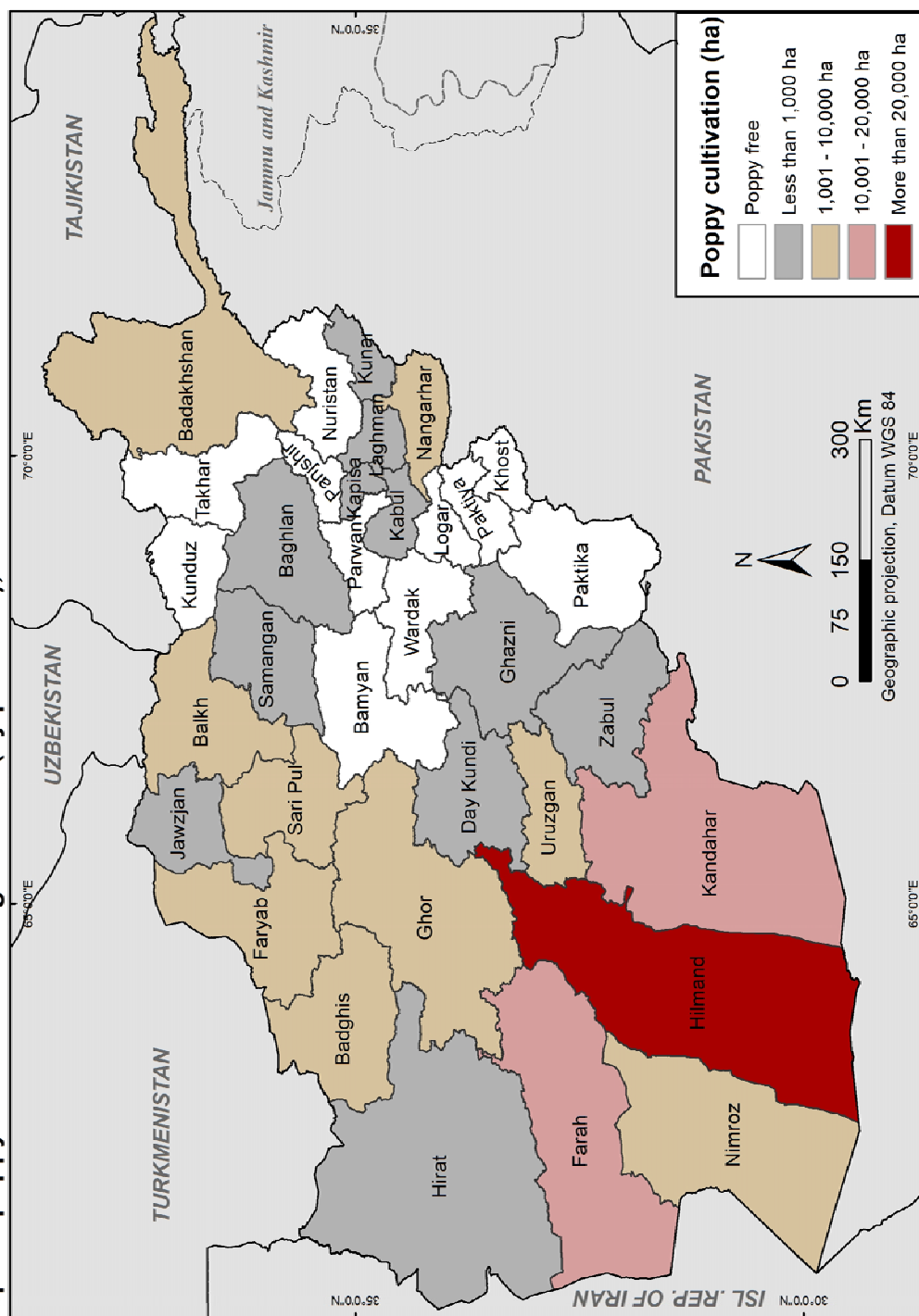
The evolution of the drug situation in Afghanistan will be influenced by factors including socioeconomic development, interventions on drug demand and supply, and eventually by changes in national and international drug markets. The evidence suggests that addressing the drug production problem in Afghanistan will require holistic interventions that tackle more than opium production, and take account of market dynamics in both national and international dimensions.

⁷ OCHA, “High-level ministerial meeting on the humanitarian situation in Afghanistan 2021: Concept note”, 12 September 2021, https://www.unocha.org/sites/unocha/files/20210912%20HLM%20Afghanistan%202021_Concept%20Note.pdf

⁸ Based on a UNODC needs assessment survey conducted with 16,000 households in 13 provinces in Afghanistan in 2017; and national annual rural socioeconomic surveys (2018-2020) conducted by UNODC and the Government of Afghanistan.

⁹ Based on structural equation model results from the 2017 UNODC needs assessment survey for alternative development in 13 provinces in Afghanistan.

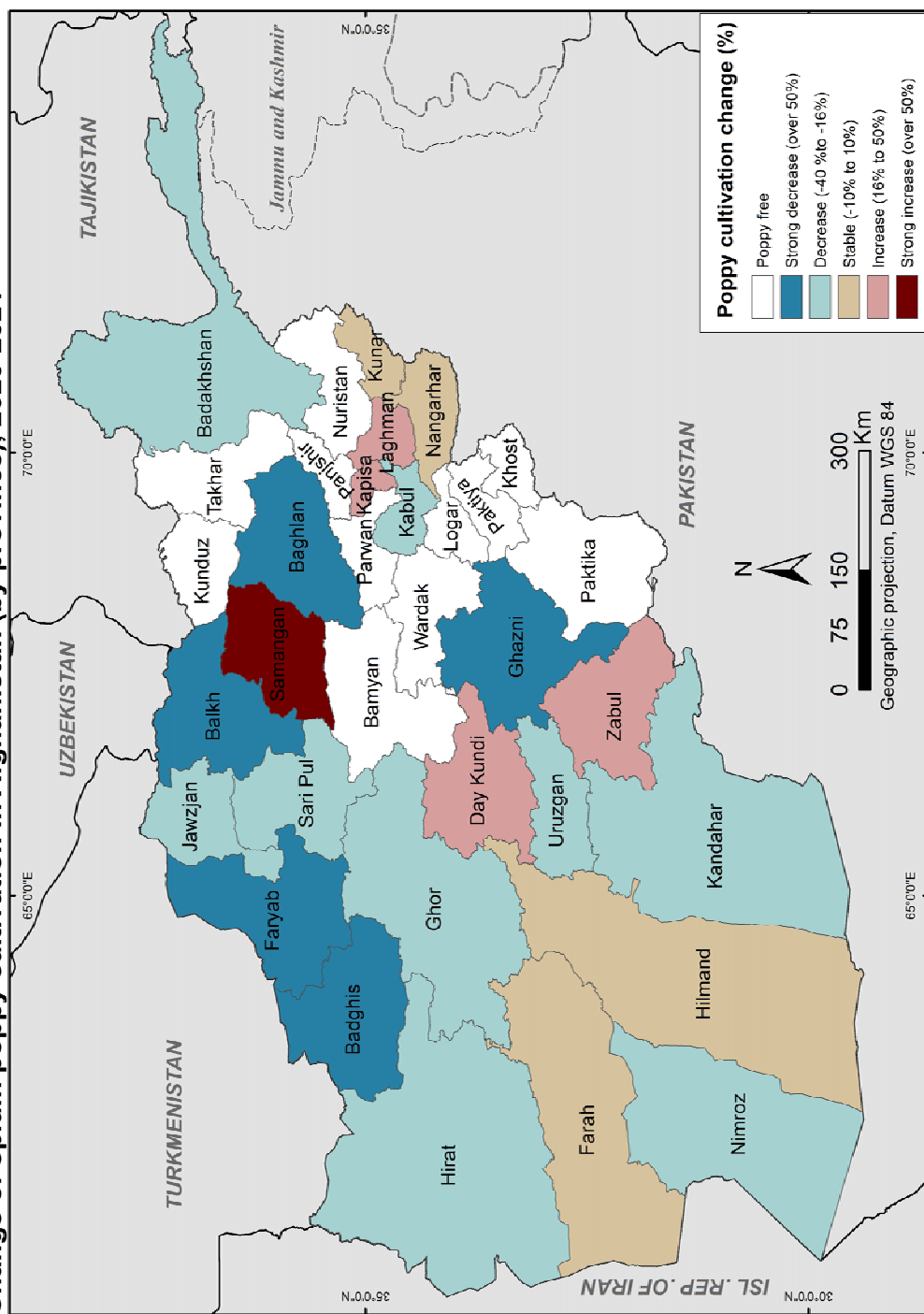
Opium poppy cultivation in Afghanistan (by province), 2021



Source: Government of Afghanistan – National monitoring system implemented by UNODC/NSIA

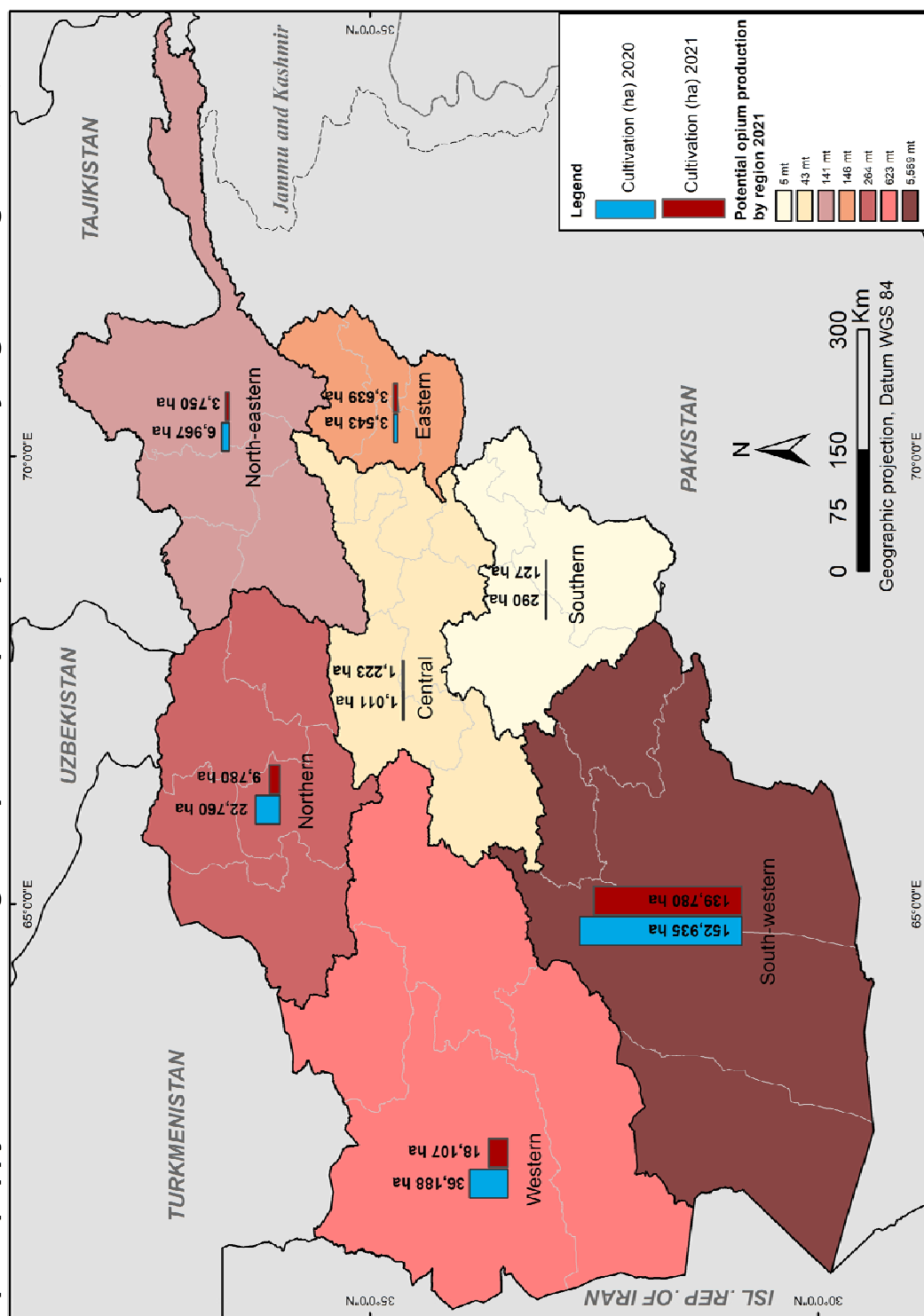
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Change of opium poppy cultivation in Afghanistan (by province), 2020-2021



Source: Government of Afghanistan - National monitoring system implemented by UNODC/INSIA
 Note: The boundaries and names shown on this map do not imply official endorsement or acceptance by the United Nations.
 Dotted line represents approximately the line of control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

Opium poppy cultivation change and potential opium production by region in Afghanistan, 2021



Source: Government of Afghanistan - National monitoring system implemented by UNODC/INSIA
 Notes: The boundaries and names shown and the designation used on this map do not imply official endorsement or acceptance by the United Nations.
 Dotted line represents approximately the line of control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

1 Introduction

The *Afghanistan Opium Survey 2021* was implemented under the project “Monitoring of Opium Production in Afghanistan” (AFG/F98), with financial contributions from the Government of United States of America. Information and data contained in this report, unless otherwise stated, are based on data collected by UNODC through surveys and other tools in Afghanistan and through global data collections on drugs.¹⁰ Data on opium cultivation and production are based on the Afghanistan Opium Surveys 1994-2020 published by UNODC and the Government of Afghanistan, as well as the latest findings of the Afghanistan Opium Survey conducted in 2021.

The results provide a detailed assessment of the outcome of the current year’s opium season and together with data from previous years, enable the identification of medium- and long-term trends in the evolution of the illicit drug problem. This information is essential for planning, implementing and monitoring the impact of measures required for tackling a problem that has far-reaching implications for Afghanistan and the international community.

The opium survey is implemented within the technical framework of the UNODC Illicit Crop Monitoring Programme (ICMP), established in 1999 upon request of the Commission on Narcotic Drugs in its resolution 42/3, Monitoring and verification of illicit cultivation. The objective of ICMP is to assist the international community in monitoring the extent and evolution of illicit crops and to compile reliable and internationally comparable data. Currently, UNODC carries out and supports monitoring activities in six countries affected by illicit crop cultivation: coca surveys in Bolivia, Colombia, and Peru; and opium poppy surveys in Afghanistan, Mexico and Myanmar.

2 Opium Poppy Cultivation

2.1 National and regional opium poppy cultivation trends

The total area under opium poppy cultivation in Afghanistan was estimated at 177,000 hectares in 2021, a decrease by 21% or 47,000 hectares compared to the previous year. This level of opium poppy cultivation is the eighth highest since the beginning of systematic opium poppy monitoring and recording in 1994.

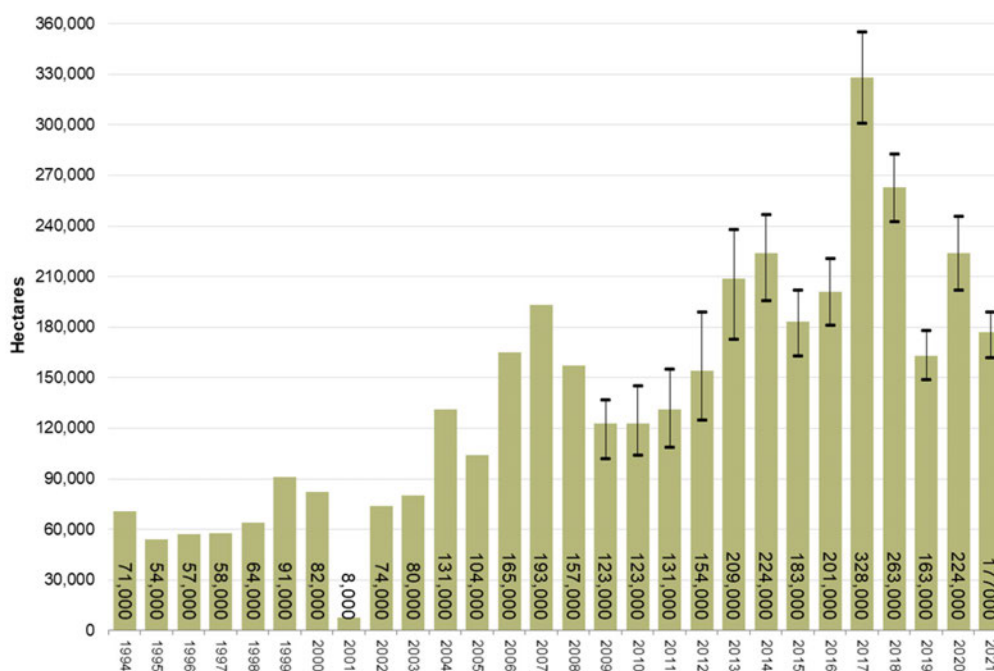
The decreases were observed in almost all major opium poppy cultivating provinces. Badghis and Faryab provinces recorded the most significant reduction by 78% and 63%, respectively, in total reducing the area under opium cultivation by 25,800 hectares. Balkh, Badakhshan, Nangarhar and Nimroz also showed a decrease in cultivation by 63%, 44%, 9% and 21%. Hilmand and Kandahar provinces, which had the largest areas under opium-cultivation (more than 70% of national total), witnessed a reduction of 5% and 17% respectively in 2021, amounting to a net reduction by over 9,400 hectares.

The regional distribution of opium poppy cultivation shows that the majority (79%) of cultivation continued to be in the South-western region of the country. The Western region accounted for 10% of total cultivation, and the other regions contributed the remaining 11%.

Hilmand remained the country’s major opium poppy cultivating province at 109,778 hectares, followed by Kandahar (16,971 hectares) and Farah (11,461 hectares),

The number of poppy-free provinces in Afghanistan decreased from 12 to 11 in 2021. Samangan lost its poppy-free status with an estimated 141 hectares of opium poppy cultivation.

¹⁰ UNODC, annual report questionnaires.

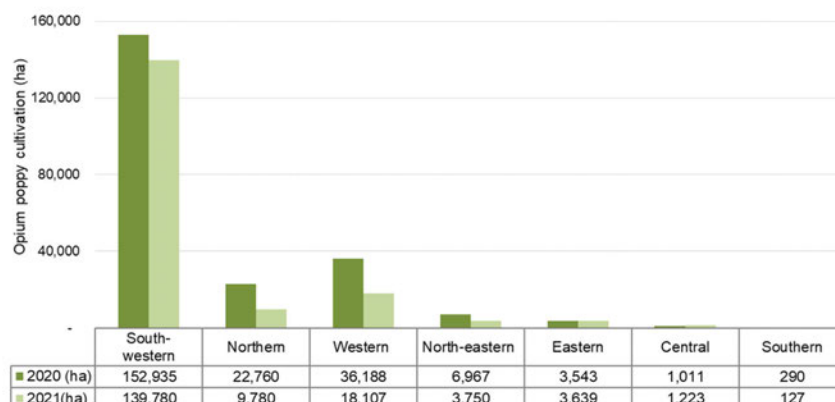
Figure 1 Opium poppy cultivation in Afghanistan, 1994-2021 (Hectares)

The vertical lines represent the upper and lower bounds of the 95% confidence interval.

Table 1 Regional opium poppy cultivation, 2019-2021

Region	2020 (ha)	2021(ha)	Change (%)	Change (ha)
Central	1,011	1,223	21%	212
Eastern	3,543	3,639	3%	96
North-eastern	6,967	3,750	-46%	-3,217
Northern	22,760	9,780	-57%	-12,980
South-western	152,935	139,780	-9%	-13,155
Southern	290	127	-56%	-163
Western	36,188	18,107	-50%	-18,081
Rounded Total	224,000	177,000	-21%	-47,000

Estimates are rounded, percentage changes have been calculated based on precise figures.

Figure 2 Opium poppy cultivation in Afghanistan, by region 2019-2021 (Hectares)

In the **Eastern region**, opium poppy cultivation is mainly driven by Nangarhar (2,027 hectares), although there was a decrease by 9%. Kunar and Laghman, where poppy cultivation is low compared to Nangarhar, saw increases by 5% and 36%, respectively. Nuristan province continued to be poppy-free in 2021.

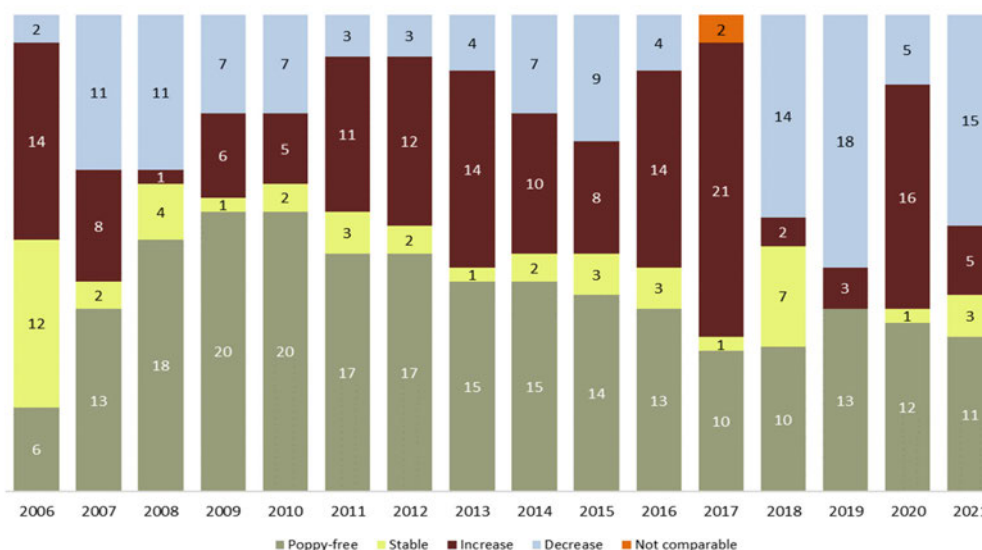
In the **North-eastern region**, Badakhshan saw a significant decrease of 44% in opium poppy cultivation from 6,395 hectares to 3,561 hectares. Takhar and Kunduz remained poppy-free in 2021.

In the **Northern region**, the decrease in opium poppy cultivation was mainly driven by strong decrease in Faryab and Balkh, at 64% each. A moderate decrease was also observed in Saripul from 2,607 hectares to 1,975 hectares. Cultivation in Jawzjan also decreased by 37% from 1,124 to 708 hectares. Samangan lost its poppy free status with 141 hectares of opium cultivation.

In the **South-western region**, opium poppy cultivation decreased in all provinces: Hilmand (5,837 hectares or -5%), Kandahar (3583 hectares or -17%), Nimroz (-626 hectares or -21%), and Uruzgan (3,698 hectares or -28%), Zabul (-572 hectares or -140%). Hilmand remained the country's main opium-poppy-cultivating province, accounting for 62% of total opium poppy cultivation.

The **Western region** continued to be the second most important opium poppy cultivating region in the country in 2021. The main poppy-cultivating provinces in the region, Badghis saw significant decrease from 22,402 hectares to 4,904 hectares which was mainly driven by drought. Farah remained also saw a decrease by -9% from 10,483 hectares in 2020 to 11,461 hectares in 2021. Opium poppy cultivation also decreased in Ghor and Hirat provinces by 49% and 36%, respectively.

In the **Central region**, the opium poppy cultivation increased by 21% from 1,011 hectares to 1,223 hectares. The opium cultivating provinces are Day Kundi, Kabul and Kapisa. In 2021.

Figure 3 Number of provinces by opium poppy cultivation trends, 2006-2021

For the purpose of this table, change of area under cultivation from one year to the next is considered stable when the change is smaller than 10 per cent. Data since 2006 has been updated in 2015 to fit this criterion.

Table 2 Main opium-poppy-cultivating provinces in Afghanistan, 2016-2021 (Hectares)

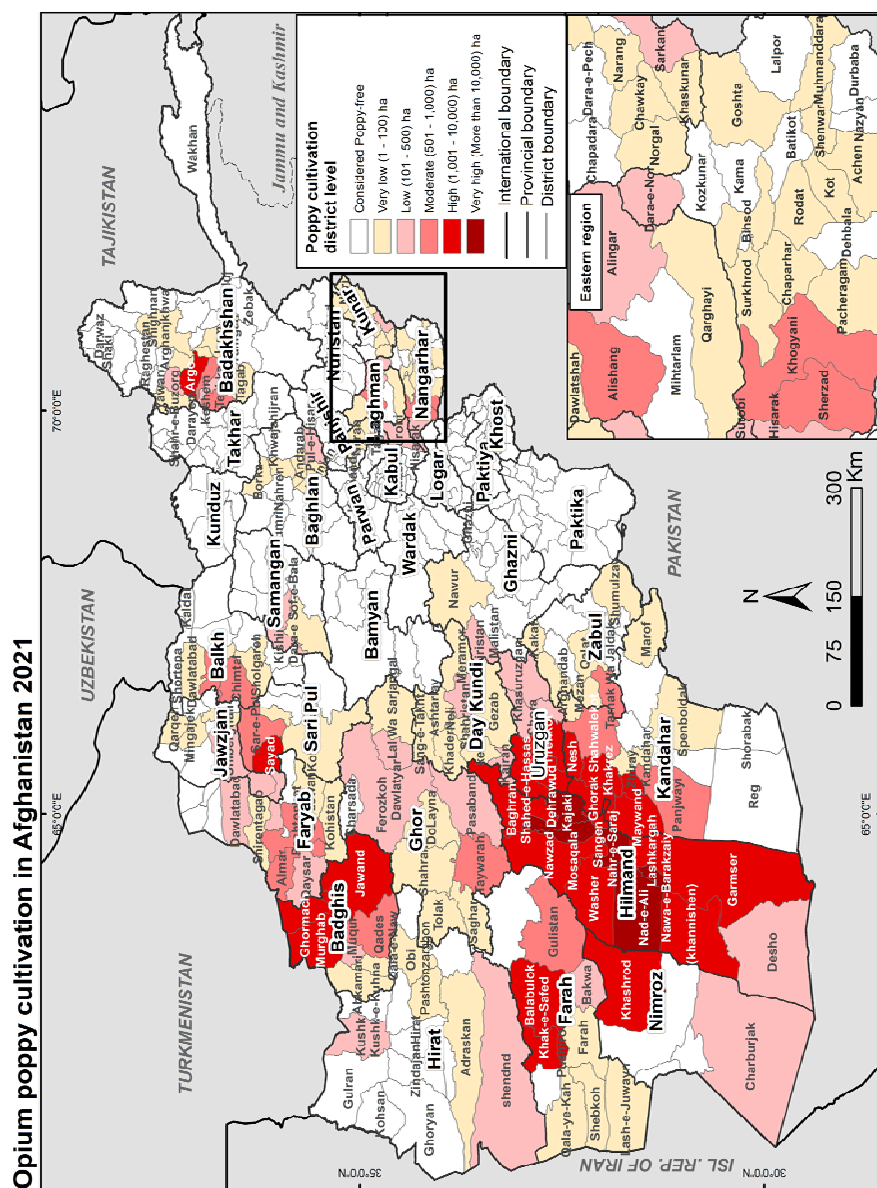
Province	2016	2017	2018	2019	2020	2021	Change 2020-2021	2021(ha) as % of total
Hilmand	80,273	144,018	136,798	90,727	115,597	109,778	-5%	62%
Badghis	35,234	24,723	6,973	7,631	22,402	4,904	-78%	3%
Kandahar	20,475	28,010	23,410	13,954	20,555	16,971	-17%	10%
Uruzgan	15,503	21,541	18,662	11,578	13,444	9,746	-28%	6%
Faryab	2,923	22,797	8,175	6,621	13,083	4,778	-63%	3%
Farah	9,101	12,846	10,916	7,113	10,483	11,461	9%	6%
Badakhshan	6,298	8,311	7,703	4,702	6,395	3,561	-44%	2%
Balkh	2,085	12,116	8,532	7,042	5,946	2,177	-63%	1%
Nimroz	5,303	11,466	9,115	2,002	2,931	2,304	-21%	1%
Nangarhar	14,344	18,976	17,177	3,067	2,225	2,027	-9%	1%
Rest of the country	9,771	23,499	15,127	9,006	10,634	8,820	-17%	5%
Rounded Total	201,000	328,000	263,000	163,000	224,000	177,000	-21%	100%

In 2017, the provincial boundaries of Badghis (Western region) and Faryab (Northern region) were changed. Ghormach district, formerly part of Badghis province and a major opium poppy cultivating district, came in 2017 under the administration of the Governor of Faryab province. The changes in opium poppy cultivation in these two regions are affected by this change.

Table 3 Opium poppy cultivation (2016-2021) in Afghanistan (Hectares)

PROVINCE	Cultivation (ha)					2021	Change 2020-2021 (%)	Estimation method 2021
	2016	2017	2018	2019	2020			
Bamyan	Poppy-free	Poppy-free	Poppy-free	Poppy-free	Poppy-free	Poppy-free	NA	V
Day Kundi	374	1,508	747	583	550	Poppy-free	NA	S
Kabul	398	435	484	197	284	Poppy-free	NA	T
Kapisa	608	968	386	Poppy-free	178	Poppy-free	NA	T
Logar	Poppy-free	Poppy-free	Poppy-free	Poppy-free	Poppy-free	Poppy-free	NA	T
Panjshir	Poppy-free	Poppy-free	Poppy-free	Poppy-free	Poppy-free	Poppy-free	NA	V
Parwan	Poppy-free	Poppy-free	Poppy-free	Poppy-free	Poppy-free	Poppy-free	NA	T
Wardak	Poppy-free	Poppy-free	Poppy-free	Poppy-free	Poppy-free	Poppy-free	NA	V
Central Region	1,380	2,911	1,617	780	1,011	0	-100%	
Kunar	1,276	1,634	1,732	967	595	626	5%	S
Laghman	1,380	2,257	2,092	908	723	987	36%	S
Nangarhar	14,344	18,976	17,177	3,067	2,225	2,027	-9%	S
Nuristan	Poppy-free	121	Poppy-free	Poppy-free	Poppy-free	Poppy-free	NA	T
Eastern Region	17,000	22,988	21,001	4,942	3,543	3,639	3%	
Badakhshan	6,298	8,311	7,703	4,702	6,395	3,561	-44%	S
Baghlan	849	1,057	1,076	271	572	Poppy-free	NA	T
Kunduz	Poppy-free	Poppy-free	Poppy-free	Poppy-free	Poppy-free	188	NA	T
Takhar	Poppy-free	Poppy-free	251	Poppy-free	Poppy-free	Poppy-free	NA	T
North-eastern Region	7,147	9,368	9,030	4,973	6,967	3,750	-46%	
Balkh	2,085	12,116	8,532	7,042	5,946	2,177	-63%	S
Faryab	2,923	22,797	8,175	6,621	13,083	4,778	-63%	S
Jawzjan	409	3,237	338	1,332	1,124	708	-37%	S
Samangan	Poppy-free	243	238	Poppy-free	Poppy-free	141	NA	T
Sari Pul	1,686	3,550	660	2,134	2,607	1,975	-24%	S
Northern Region	7,103	41,942	17,944	17,128	22,760	9,780	-57%	
Hilmand	80,273	144,018	136,798	90,727	115,597	109,778	-5%	S
Kandahar	20,475	28,010	23,410	13,954	20,555	16,971	-17%	S
Nimroz	5,303	11,466	9,115	2,002	2,931	980	-67%	S
Uruzgan	15,503	21,541	18,662	11,578	13,444	2,304	-83%	S
Zabul	1,363	2,131	2,581	183	408	9,746	2286%	S
South-western Region	122,917	207,165	190,565	118,444	152,935	139,780	-9%	
Ghazni	Poppy-free	1,027	373	123	290	Poppy-free	NA	T
Khost	Poppy-free	Poppy-free	Poppy-free	Poppy-free	Poppy-free	Poppy-free	NA	V
Paktika	Poppy-free	Poppy-free	Poppy-free	Poppy-free	Poppy-free	Poppy-free	NA	V
Paktya	Poppy-free	Poppy-free	Poppy-free	Poppy-free	Poppy-free	Poppy-free	NA	V
Southern Region	0	1,027	373	123	290	0	-100%	
Badghis	35,234	24,723	6,973	7,631	22,402	4,904	-78%	S
Farah	9,101	12,846	10,916	7,113	10,483	11,461	9%	S
Ghor	1,222	4,228	3,574	1,960	2,848	1,451	-49%	S
Hirat	208	1,104	595	349	455	290	-36%	T
Western Region	45,765	42,901	22,059	17,053	36,188	18,107	-50%	
Total (rounded)	201,000	328,000	263,000	163,000	224,000	177,000	-21%	

Area estimation method: S=remote sensing sample survey, T=remote sensing target survey, V=village sample survey and field observation. See Methodology section for detailed description of methods used. A province is defined as poppy-free when it is estimated to have less than 100 hectares of opium poppy cultivation and are not included in the regional estimates. In 2017, the provincial boundaries of Badghis (Western region) and Faryab (Northern region) were changed. Estimates of these provinces and respective regions are not comparable between 2016 and 2017.



2.2 Provincial Breakdown

2.2.1 Central region

(Kabul, Kapisa, Day-kundi, Logar, Panjshir, Parwan, Wardak, Bayman)

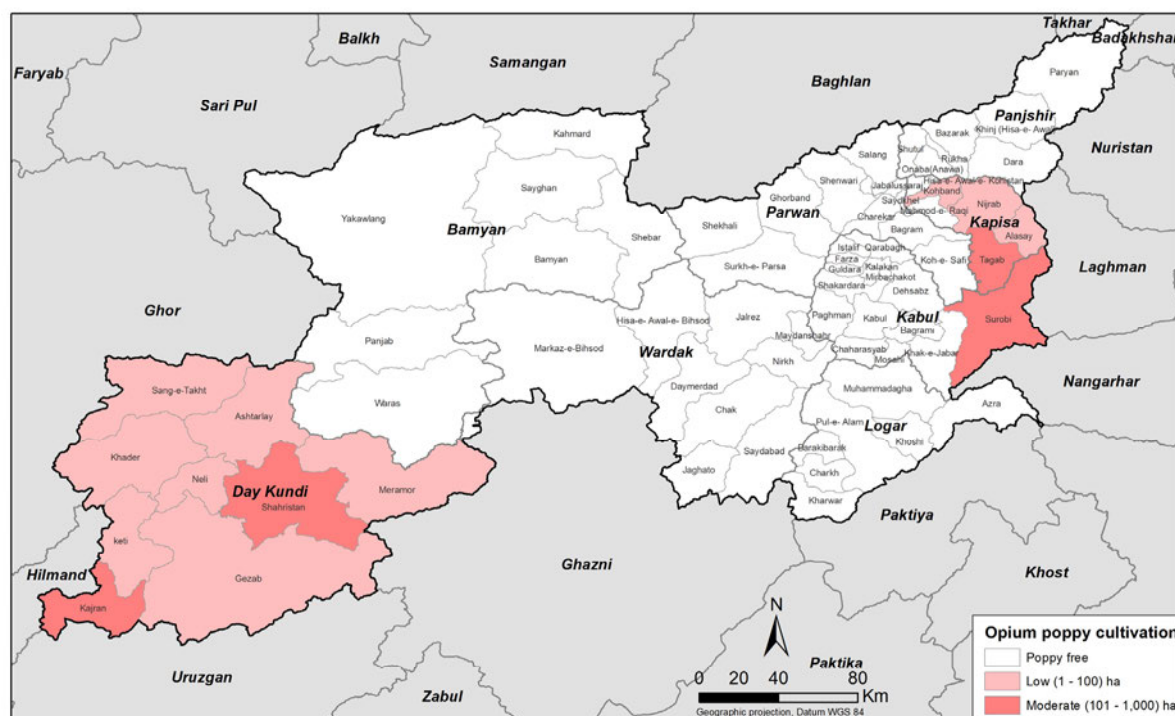
Opium poppy cultivation in the Central region increased by 21% in 2021 when compared to 2020, with the total area under cultivation increasing from 1,011 hectares to 1,223 hectares. Five out of the eight provinces in the Central region maintained their poppy-free status in 2021.

Table 4 Opium poppy cultivation in the Central region, 2016-2021 (Hectares)

PROVINCE	Cultivation (ha)					Change 2020-2021(%)
	2017	2018	2019	2020	2021	
Kabul	435	484	197	284	216	-24%
Kapisa	968	386	PF	178	216	21%
Day Kundi	1,508	747	583	550	792	44%
Logar	PF	PF	PF	PF	PF	NA
Panjshir	PF	PF	PF	PF	PF	NA
Parwan	PF	PF	PF	PF	PF	NA
Wardak	PF	PF	PF	PF	PF	NA
Bamyan	PF	PF	PF	PF	PF	NA
Central Region	2,911	1,617	780	1,011	1,223	21%

A province is defined as poppy-free (PF) when it is estimated to have less than 100 hectares of opium poppy cultivation.

Figure 4 Opium poppy cultivation in the Central region (by district), 2021



2.2.2 Eastern region

(Kunar, Laghman, Nangarhar, Nuristan)

Opium poppy cultivation in Eastern region remained stable compared to 2020.

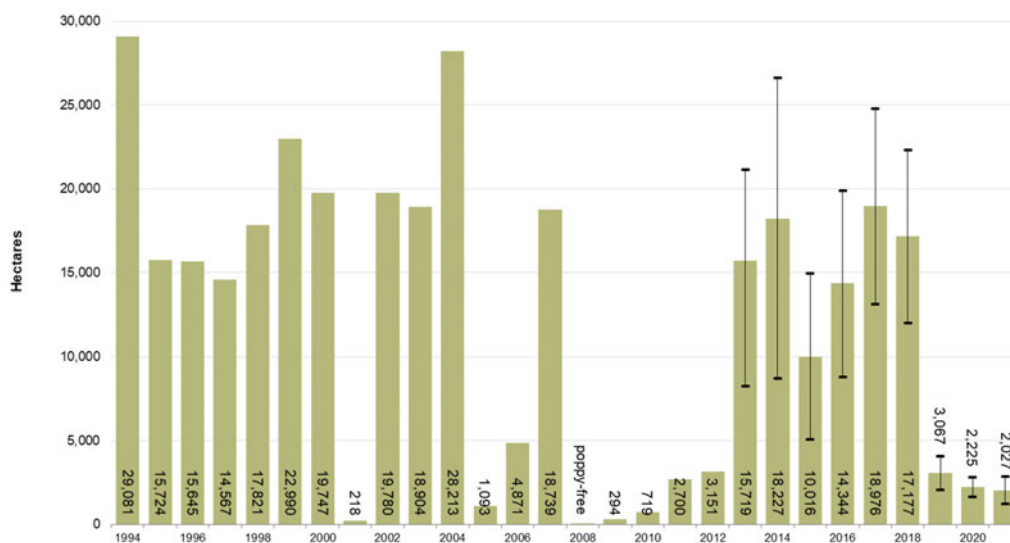
Nangarhar continued to be the major cultivating province in the Eastern region with 2,027 hectares under opium poppy cultivation, 9% less than the 2020 level. In Laghman province, opium poppy cultivation increased by 36% from 723 hectares to 987 hectares. In Kunar province, opium poppy cultivation remained stable with 626 hectares in 2021.

Table 5 Opium poppy cultivation and eradication in the Eastern region, 2016-2021 (Hectares)

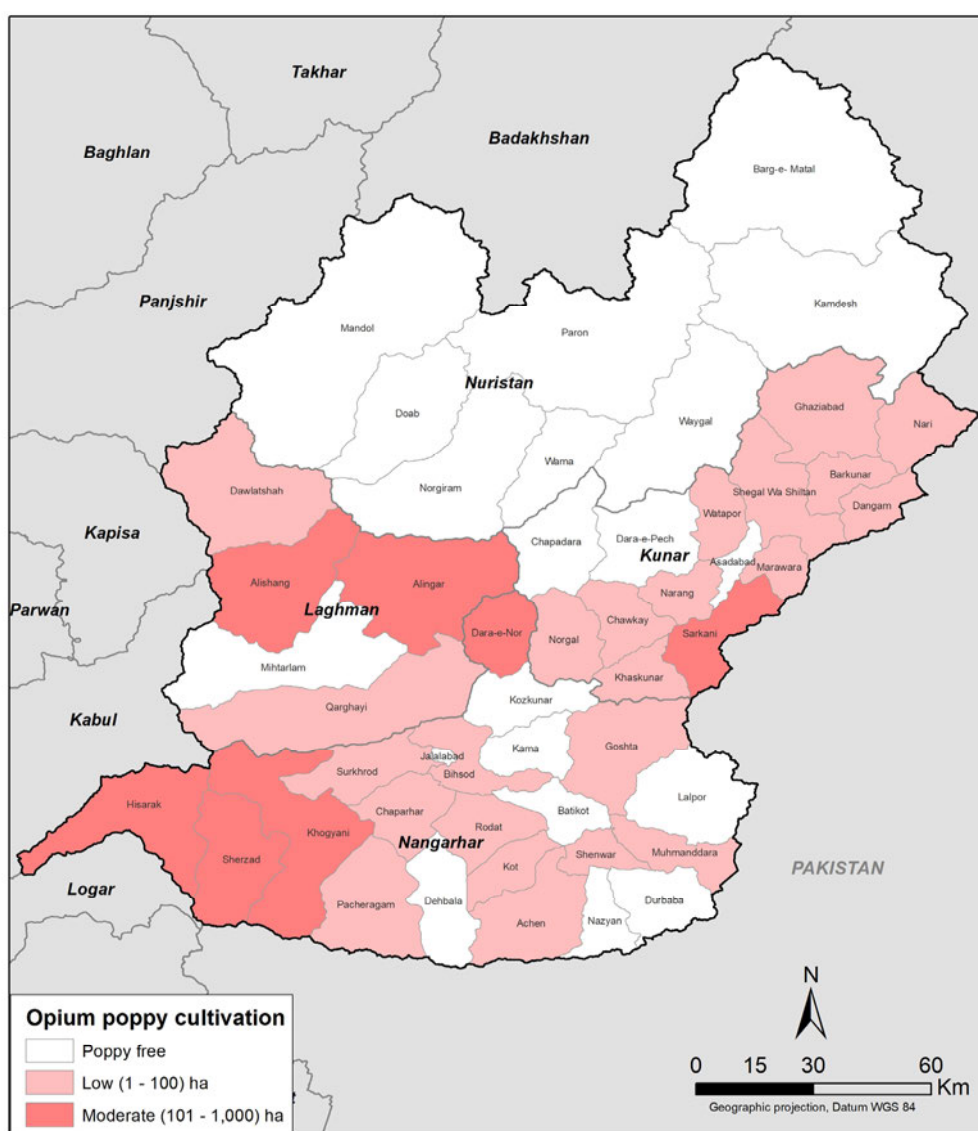
PROVINCE	Cultivation (ha)					Change 2020- 2021(%)	Eradication (ha) 2021
	2016	2017	2018	2019	2020		
Kunar	1,276	1,634	1,732	967	595	626	5%
Laghman	1,380	2,257	2,092	908	723	987	36%
Nangarhar	14,344	18,976	17,177	3,067	2,225	2,027	-9%
Nuristan	PF	121	PF	PF	PF	PF	NA
Eastern Region	17,000	22,988	21,001	4,942	3,543	3,639	3%

A province is defined as poppy-free (PF) when it is estimated to have less than 100 hectares of opium poppy cultivation.

Figure 5 Opium poppy cultivation in Nangarhar province, 1994-2021 (Hectares)



The vertical lines represent the upper and lower bounds of the 95% confidence interval.

Figure 6 Opium poppy cultivation in the Eastern region (by district), 2021

2.2.3 Northern region

(Balkh, Faryab, Sari-Pul, Jawzjan, Samangan)

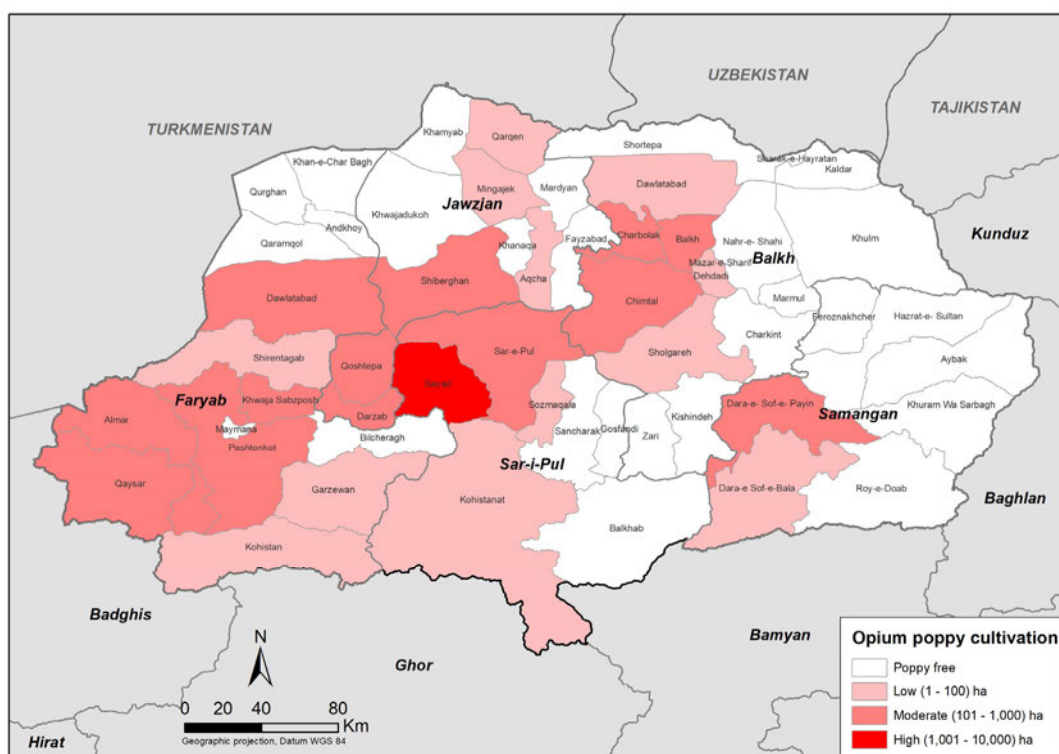
In 2020, opium poppy cultivation in Balkh decreased by 63% from 5,946 hectares to 2,177 hectares. Chimtal, Balkh and Chahar Bolak are the main opium poppy cultivating districts. In Faryab, opium poppy cultivation decreased by 63% from 13,083 hectares in 2020 to 4,778 hectares in 2021. Samangan province, lost its poppy free status with 141 hectares; it was poppy-free from 2007 to 2016 and in 2019 and 2020. Bamyan remained poppy-free.

In Sari-Pul, the cultivation decreased by 24% from 2,607 ha in 2020 to 1,975 ha in 2021, with the main opium cultivating districts being Sayyad and the Sari-Pul provincial center. Opium poppy cultivation was mainly concentrated in rain-fed agriculture areas. In Jawzjan province opium poppy cultivation decreased by 37% from 1,124 hectares in 2020 to 708 hectares in 2021.

Table 6 Opium poppy cultivation in the Northern region, 2016-2021 (Hectares)

PROVINCE	Cultivation (ha)					Change 2020-2021 (%)
	2017	2018	2019	2020	2021	
Balkh	12,116	8,532	7,042	5,946	2,177	-63%
Faryab	22,797	8,175	6,621	13,083	4,778	-63%
Sari Pul	3,550	660	2,134	2,607	1,975	-24%
Jawzjan	3,237	338	1,332	1,124	708	-37%
Samangan	243	238	PF	PF	141	NA
Northern Region	41,942	17,944	17,128	22,760	9,780	-57%

A province is defined as poppy-free (PF) when it is estimated to have less than 100 hectares of opium poppy cultivation. From 2017, the provincial boundaries of Badghis (Western region) and Faryab (Northern region) were changed. Ghormach district, formerly part of Badghis province and a major opium poppy cultivating district came under the administration of the Governor of Faryab province. The changes in opium poppy cultivation in these two regions are affected by this change.

Figure 7 Opium poppy cultivation in the Northern region (by district), 2021

Source: Government of Afghanistan - National monitoring system implemented by UNODC/NSIA
 Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

2.2.4 North-eastern region

(Badakhshan, Baghlan, Takhar and Kunduz)

In Badakhshan province, in 2021, 3,561 hectares were cultivated with opium poppy, 44% less than in 2020. Opium poppy cultivation in Badakhshan was mostly confined to rain-fed areas.

In Baghlan province, opium poppy cultivation in 2021 decreased by 67% from 572 hectares in 2020 to 188 hectares in 2021.

Takhar province was poppy-free from 2008 to 2017 but the province lost its poppy-free status in 2018 with 251 hectares of opium poppy cultivation. From 2019, the province was poppy-free again.

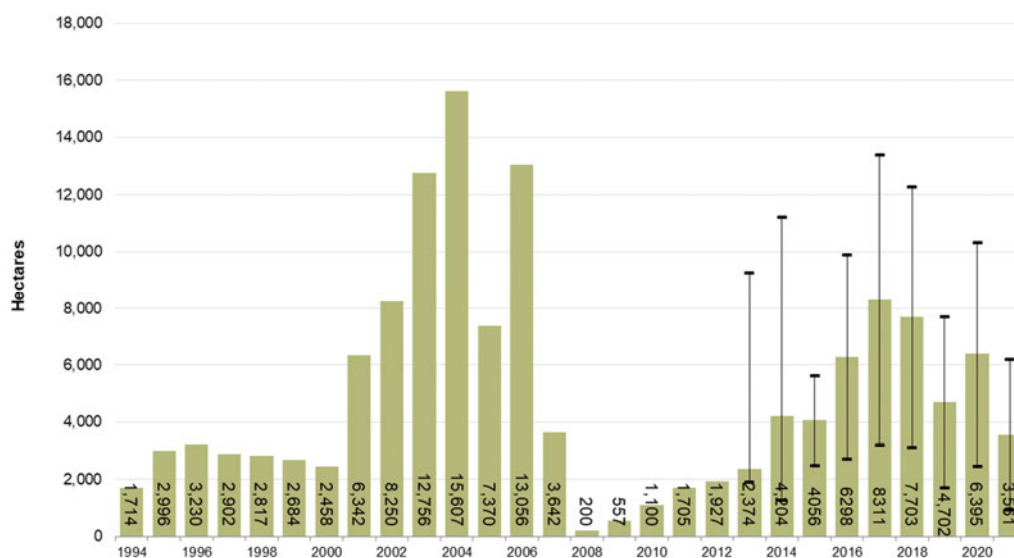
Kunduz province has been poppy-free since 2007. While a small amount of opium poppy cultivation was observed in this province in recent years, it remained under 100 hectares in 2021, the threshold for being considered poppy-free.

Table 7 Opium poppy cultivation in the North-eastern region, 2014-2021 (Hectares)

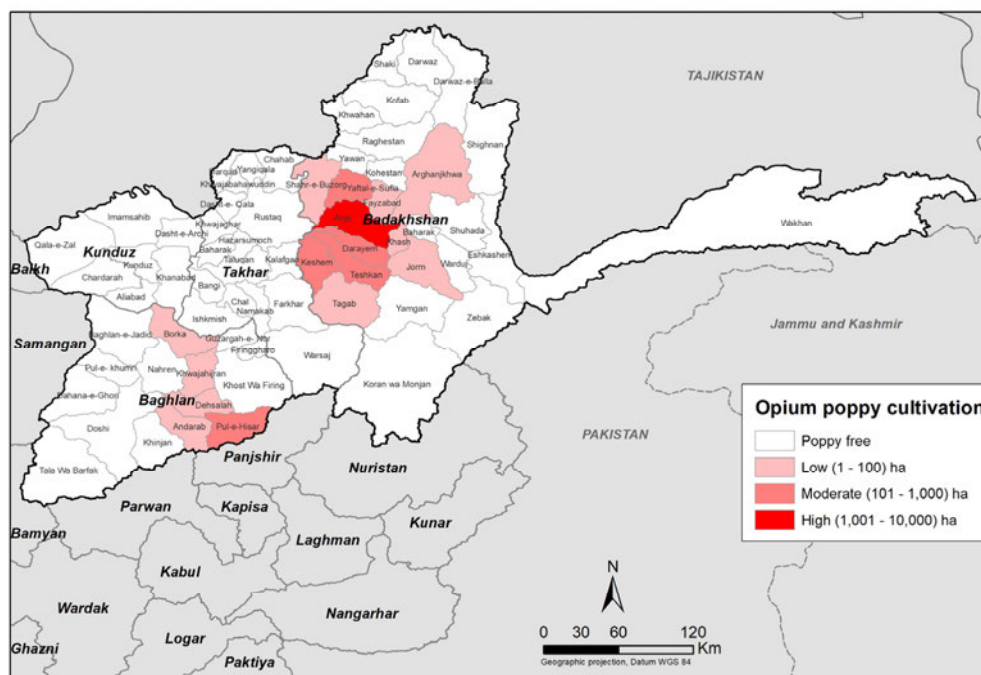
PROVINCE	Cultivation (ha)					Change 2020-2021(%)
	2017	2018	2019	2020	2021	
Badakhshan	8,311	7,703	4,702	6,395	3,561	-44%
Baghlan	1,057	1,076	271	572	188	-67%
Takhar	PF	251	PF	PF	PF	NA
Kunduz	PF	PF	PF	PF	PF	NA
North-eastern Region	9,368	9,030	4,973	6,967	3,750	-46%

A province is defined as poppy-free (PF) when it is estimated to have less than 100 hectares of opium poppy cultivation.

Figure 8 Opium poppy cultivation in Badakhshan province, 1994-2021 (Hectares)



The high-low lines represent the upper and lower bounds of the 95% confidence interval.

Figure 9 Opium poppy cultivation in the North-eastern region (by district), 2021

2.2.5 South-western region

(Hilmand, Kandahar, Uruzgan, Zabul, Nimroz)

Hilmand province saw a 5% decrease in opium poppy cultivation and remained Afghanistan's single largest opium-poppy-cultivating province in 2021, with 109,778 hectares. It accounted for 62% of the total area under opium poppy cultivation in Afghanistan.

In Kandahar province opium poppy cultivation decreased by 17% from 20,555 hectares in 2020 to 16,971 hectares in 2021.

In Uruzgan province opium poppy cultivation decreased by 28% from 13,444 hectares in 2020 to 9,746 hectares in 2021.

In Nimroz province opium poppy cultivation decreased by 21% from 2,931 hectares in 2020 to 2,304 hectares in 2021.

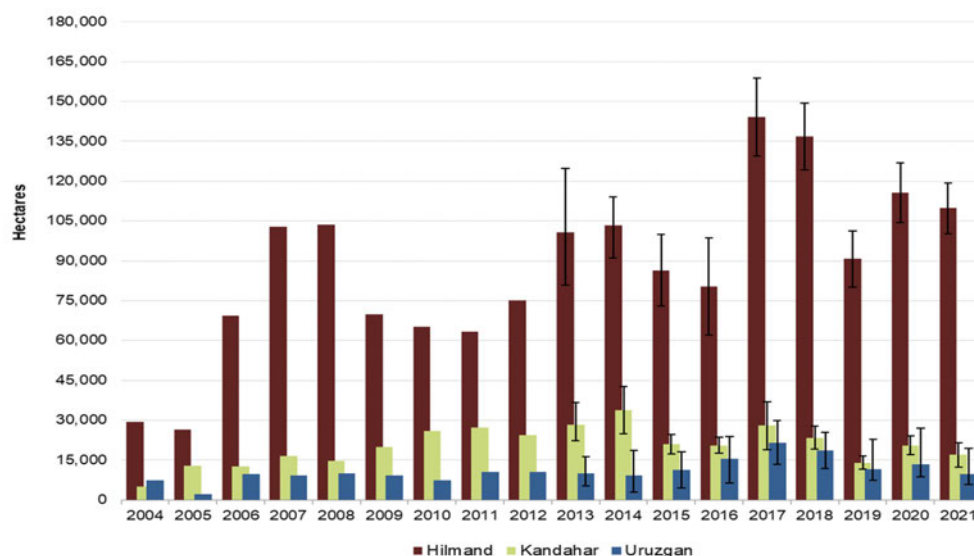
Opium poppy cultivation in Zabul province saw an increase by 140% from 408 in 2020 to 980 hectares in 2021.

Table 8 Opium poppy cultivation in the South-western region, 2016-2021 (Hectares)

PROVINCE	Cultivation (ha)						Change 2020-2021(%)
	2016	2017	2018	2019	2020	2021	
Hilmand	80,273	144,018	136,798	90,727	115,597	109,778	-5%
Kandahar	20,475	28,010	23,410	13,954	20,555	16,971	-17%
Nimroz	15,503	21,541	18,662	2,002	2,931	2,304	-21%
Uruzgan	1,363	2,131	2,581	11,578	13,444	9,746	-28%
Zabul	5,303	11,466	9,115	183	408	980	140%
South-western region	122,917	207,165	190,565	118,444	152,935	139,780	-9%

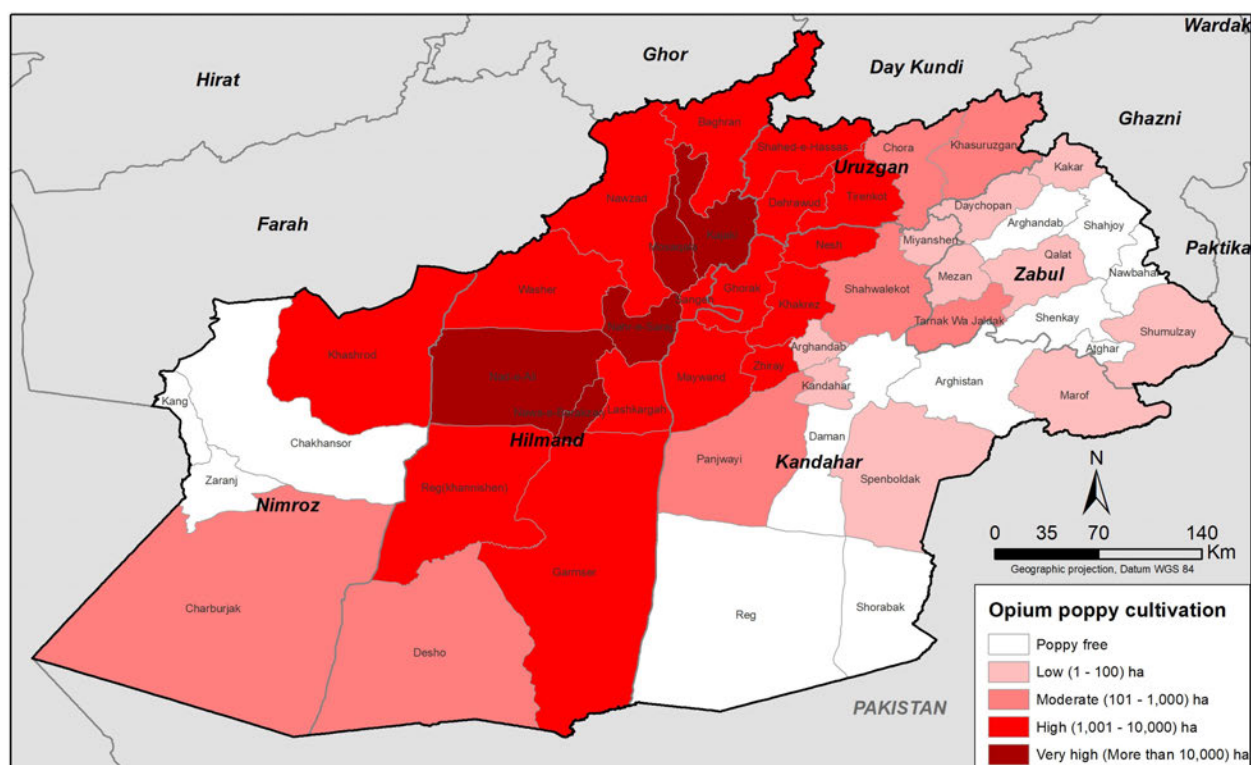
A province is defined as poppy-free when it is estimated to have less than 100 hectares of opium poppy cultivation.

Figure 10 Opium poppy cultivation in Hilmand, Kandahar and Uruzgan provinces, 2004-2021 (Hectares)



The high-low lines represent the upper and lower bounds of the 95% confidence interval

Figure 11 Opium poppy cultivation in the South-Western region (by district), 2021



Source: Government of Afghanistan - National monitoring system implemented by UNODC/NSIA

Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

2.2.6 Southern region

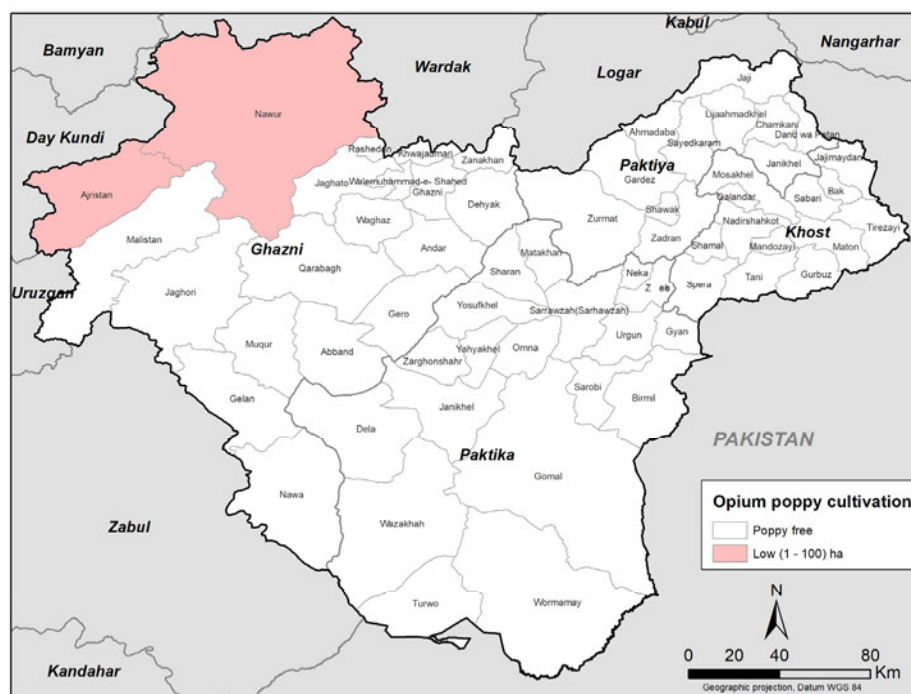
(Ghazni, Khost, Paktya, Paktika)

Ghazni province was poppy free from 1995 to 2016. The province lost its poppy-free status in 2017 with 1,027 hectares under opium poppy cultivation. In 2021, total opium cultivation was 127 hectares. Opium poppy was mainly cultivated in Ajrestan district.

Table 9 Opium poppy cultivation in the Southern region, 2016-2020 (Hectares)

PROVINCE	Cultivation (ha)					Change 2020-2021(%)
	2017	2018	2019	2020	2021	
Ghazni	1,027	373	123	290	127	-56%
Khost	PF	PF	PF	PF	PF	NA
Paktya	PF	PF	PF	PF	PF	NA
Paktika	PF	PF	PF	PF	PF	NA
Southern Region	1,027	373	123	290	127	-56%

Figure 12 Opium poppy cultivation in the Southern region (by district), 2021



Source: Government of Afghanistan - National monitoring system implemented by UNODC/NSIA

Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

2.2.7 Western region

(Badghis, Farah, Ghor, Hirat)

Opium poppy cultivation in **Farah** province increased by 9% from 10,483 hectares in 2020 to 11,461 hectares in 2021.

Opium poppy cultivation in **Ghor** decreased by 49% in 2021 compared to 2020: from 2,848 hectares to 1,451 hectares.

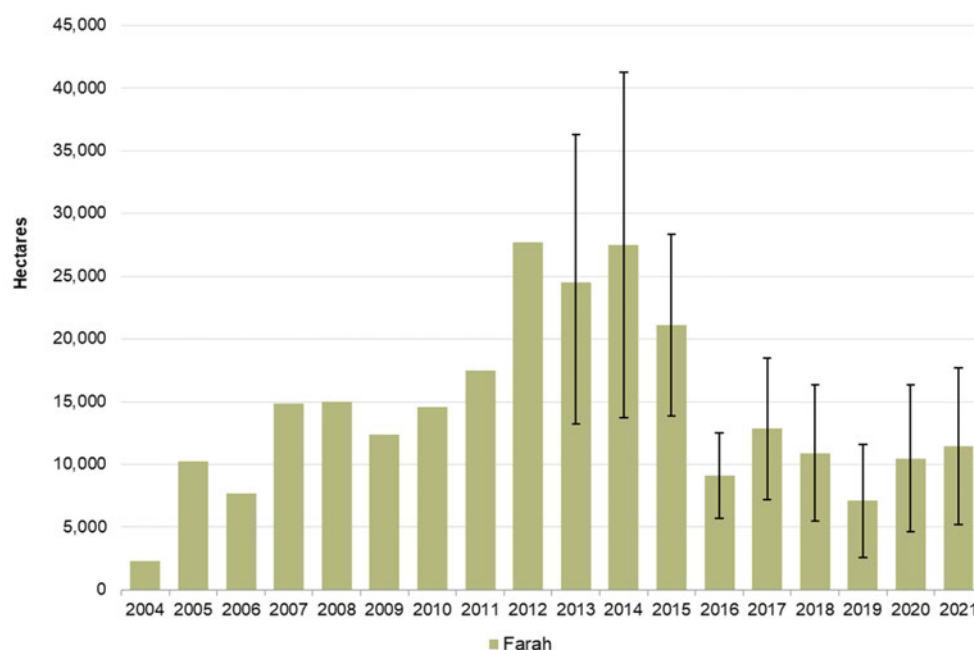
In **Hirat** province, the level of opium poppy cultivation decreased by 36%, from 455 hectares in 2020 to 290 hectares in 2021. The main opium poppy cultivating districts in Hirat province was Shindand.

Badghis province saw significant decrease from 22,402 hectares in 2020 to 4,904 hectares in 2021. The decrease was mainly driven by drought.

Table 10 Opium poppy cultivation the Western region, 2016-2021 (Hectares)

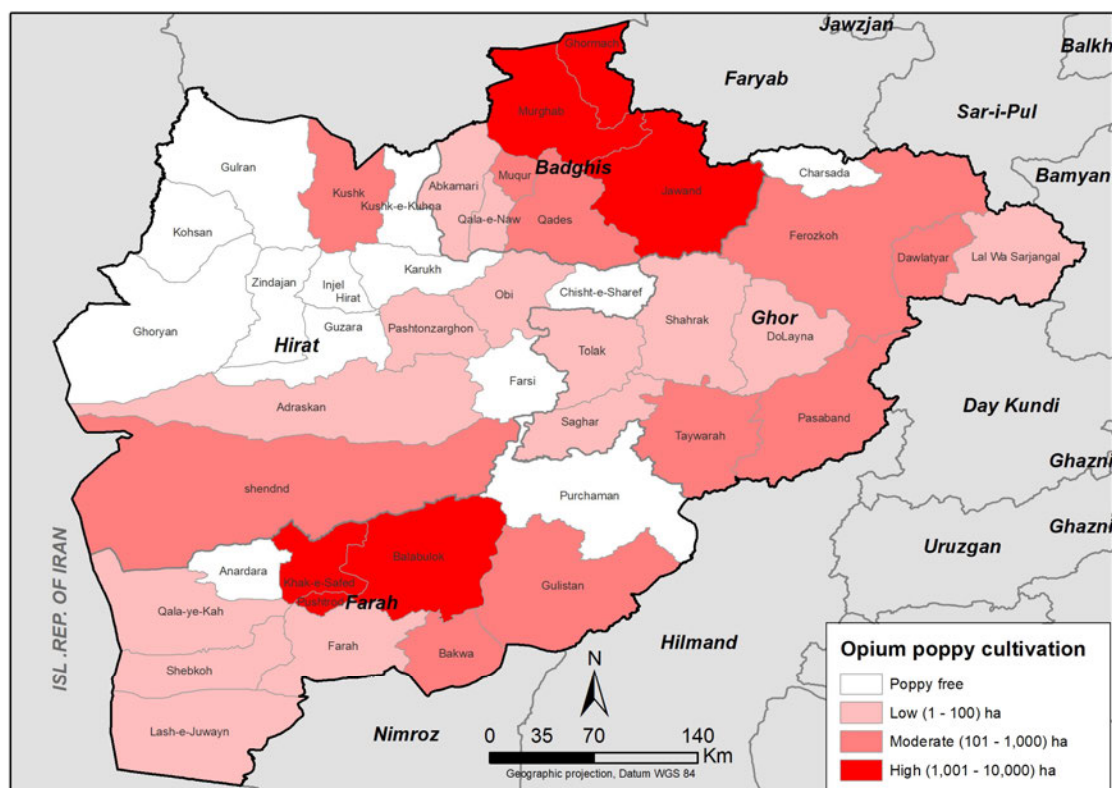
PROVINCE	Cultivation (ha)					Change 2020- 2021(%)
	2017	2018	2019	2020	2021	
Badghis	24,723	6,973	7,631	22,402	4,904	-78%
Farah	12,846	10,916	7,113	10,483	11,461	9%
Ghor	4,228	3,574	1,960	2,848	1,451	-49%
Hirat	1,104	595	349	455	290	-36%
Western Region	42,901	22,059	17,053	36,188	18,107	-50%

Figure 13 Opium poppy cultivation in Farah province, 2004-2021 (Hectares)



The high-low lines represent the upper and lower bounds of the 95% confidence interval.

Figure 14 Opium poppy cultivation in the Western region (by district), 2021



Source: Government of Afghanistan - National monitoring system implemented by UNODC/NSIA

Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

3 Potential opium yield and production

3.1 Potential opium production was estimated at 6,800 tons in 2021

In 2021, estimated potential opium production in Afghanistan amounted to 6,800 tons (6,200 - 7,400 tons). The average opium yield amounted to 38.5 kilograms per hectare in 2021.¹¹ The South-western region remained the country's major opium producing region, accounting for 82% of total opium production in Afghanistan.

In 2021, the size of the yield survey has been significantly increased in comparison to previous years. The number of poppy fields surveyed were almost three times more compared to previous years.

Table 11 Opium yield and production, by region, 2021¹²

Region	2021 average yield (kg/ha)	Production 2021 (tons)	Production as % of total
Central	35.1	43	1%
Eastern	39.5	146	2%
North	26.2	256	4%
North-eastern	38.9	149	2%
South	39.5	5	0.1%
South-western	39.8	5,569	82%
Western	34.4	623	9%
Weighted national average	38.5	6,800	100%

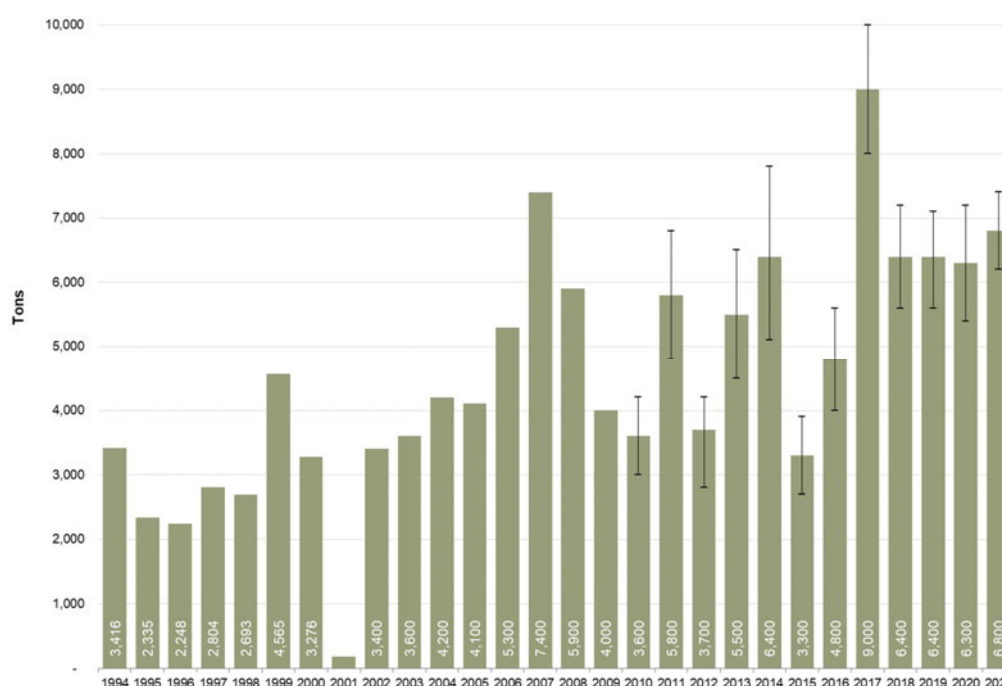
¹¹ "Potential production" is a hypothetical concept and not an estimate of actual opium or morphine/heroin production. For more information, see UNODC *World Drug Report 2011*, p. 265.

¹² Yield estimates in this report are based on the concept of potential yield, i.e., the amount opium farmers can potentially extract from poppy capsules. Depending on local conditions and practices, this may differ from the amount actually harvested.

Table 12 Opium production in Afghanistan 2014-2021, by province (tons)

Province	Production (mt)							
	2014	2015	2016	2017	2018	2019	2020	2021
Bamyan	PF	PF	PF	PF	PF	NA	PF	PF
Day Kundi*	17	6	8	39	18	NA	16	26
Kabul	11	13	18	19	11	NA	12	9
Kapisa	19	17	20	34	10	NA	7	9
Logar	PF	PF	PF	PF	PF	NA	0.3	0.3
Panjshir	PF	PF	PF	PF	PF	NA	PF	PF
Parwan	PF	PF	PF	PF	PF	NA	PF	PF
Wardak	PF	PF	PF	PF	PF	NA	PF	PF
Central Region	47	36	46	92	39	NA	35	43
Kunar	30	36	41	57	43	NA	24	25
Laghman	36	28	45	79	52	NA	30	39
Nangarhar	721	365	465	663	428	NA	91	80
Nuristan	PF	PF	PF	4	PF	NA	0	2
Eastern Region	786	429	551	803	524	NA	145	146
Badakhshan	161	161	196	294	262	NA	208	139
Baghlan	6	7	30	35	28	NA	18	7
Kunduz	PF	PF	PF	PF	PF	NA	1	0.04
Takhar	PF	PF	PF	PF	9	NA	3	3
North-eastern Region	167	168	226	329	299	NA	229.2	149
Balkh	PF	8	73	397	225	NA	185	85
Faryab	7	44	102	747	216	NA	406	106
Jawzjan	PF	PF	14	106	9	NA	35	16
Samangan	PF	PF	PF	8	6	NA	2	5
Sari Pul	7	13	59	116	17	NA	81	44
Northern Region	14	65	248	1,374	474	NA	709	256
Hilmand	3,048	1,392	1,763	3,767	3,297	NA	3,410	4,371
Kandahar	995	338	450	733	564	NA	606	680
Nimroz	297	143	118	255	203	NA	54	92
Uruzgan*	274	182	340	563	450	NA	397	387
Zabul	85	10	30	56	62	NA	12	39
South-western Region	4,700	2,065	2,701	5,374	4,576	NA	4,479	5,569
Ghazni	PF	PF	PF	45	9	NA	12	5
Khost	PF	PF	PF	PF	PF	NA	PF	PF
Paktika	PF	PF	PF	PF	PF	NA	PF	PF
Paktya	PF	PF	PF	PF	PF	NA	PF	PF
Southern Region	0	0	0	45	9	NA	12	5
Badghis	117	202	786	550	156	NA	413	109
Farah	561	343	203	286	243	NA	193	458
Ghor	10	28	27	94	80	NA	52	47
Hirat	15	5	5	25	13	NA	8	9
Western Region	702	578	1,021	955	492	NA	667	623

*Estimates prior to 2017 are not comparable since Ghormach district, a major opium cultivating district formerly part of Badghis province (Western region) came in 2017 under the administration of Faryab province. Poppy-free PF.

Figure 15 Potential opium production in Afghanistan, 1994-2021 (mt)

Figures refer to oven-dry opium. The vertical lines represent the upper and lower bounds of the 95% confidence interval.

3.2 Potential heroin production from the 2021 opium harvest

All the opium produced in Afghanistan each year is either exported as raw opium or in the form of heroin/morphine, consumed domestically in various forms, seized, stored for later use or lost (for example, due to mold, disposal to avoid seizures, etc.).

It can be estimated that the 2021 harvest of 6,800 tons provided 1,100 to 1,400 tons of opium to meet the demand for consumption of opium in its unprocessed form. The remaining 5,400 to 5,700 tons are potentially available for heroin production in and outside of Afghanistan and can yield some 390 to 650 tons of heroin of export quality (purity between 50 and 70 per cent) or 270 to 320 tons of pure heroin base.¹³

Table 13 Estimated shares of opium production available for heroin production

Opium production 2018	Demand for unprocessed opium in the region	Potential production of heroin of export quality	Potential production of pure heroin base
6,800 tons (6,200 – 7,400)	1,100 – 1,400 tons	390 - 650 tons	270 - 320 tons

A ratio of 18.5:1 (17.5:1 – 19.6:1) is used for converting opium to pure heroin base. For converting opium to 50% pure heroin, 9.2 kilograms (8.7 to 9.8 kilograms) of opium are assumed to be needed; for converting opium to 70% pure heroin, 12.9 kilograms (12.2 to 13.7 kilograms) of opium are assumed to be needed. Ranges reflect different purities and the upper and lower estimates of the demand estimates for raw opium.

¹³ For details on the demand estimates and conversion ratios, see MCN/UNODC “Afghanistan opium survey 2017 – Challenges to sustainable development, peace and security” (May 2018).

These values represent a potential heroin production from the 2021 harvest: A noteworthy share of the opium and heroin production is seized or lost along the supply chain from source to destination countries, and a proportion of the product may not enter the market in the year of interest. The amount of heroin that reaches end-consumer markets is thus lower than this estimate.

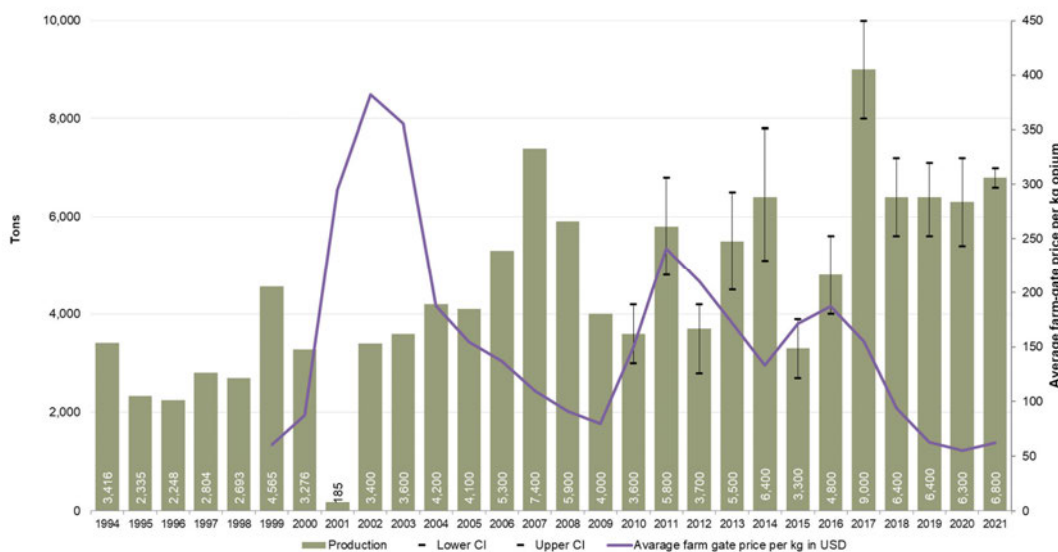
There is great uncertainty around these estimates. While confidence in the opium production estimates is high, uncertainties around the conversion ratio from opium to heroin stem mainly from the wide range of possible purities of the product and from scarce data on the efficiency of the conversion from opium to heroin (i.e., how much opium is needed to produce one kilogramme of heroin). Uncertainties around the demand estimate are mainly associated with the assumptions around annual opium consumption per user.

4 Farm-gate value of opium and value of opiate production and exports

4.1 Opium prices

In 2021, the average regional farm-gate prices at harvest time increased in all regions of Afghanistan. Despite a 13 percent increase in the national average of opium price, farm-gate prices at harvest time remained very low in 2021. This points towards an opium market that has saturated by sustained high levels of production in the past years.

Figure 16 Farm-gate prices of dry opium at harvest time weighted by production and annual opium production, 1994-2021 (tons; US dollars per kilogram)

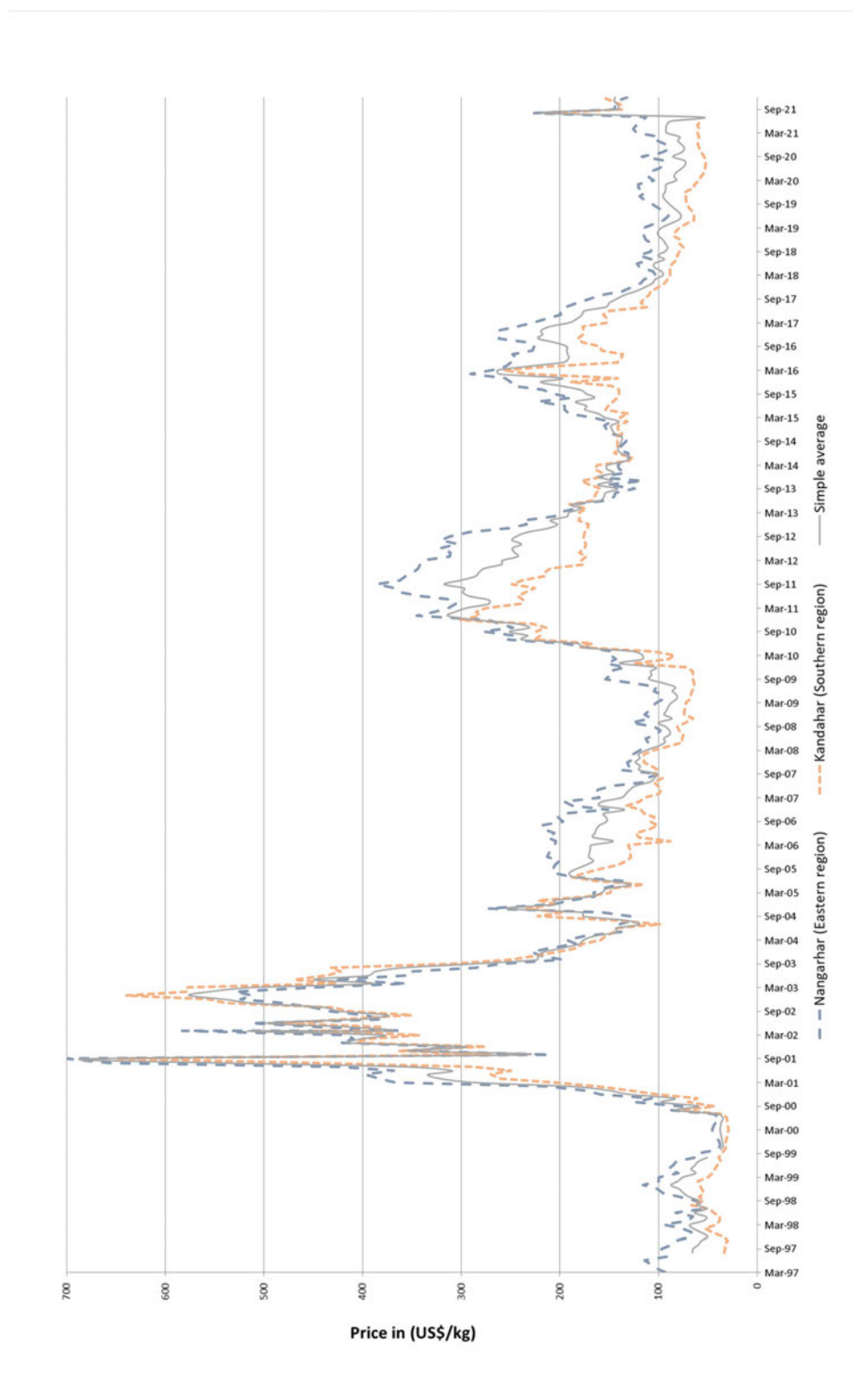


Figures refer to oven-dry opium. The vertical lines represent the upper and lower bounds of the 95% confidence interval.

Table 14 Regional farm-gate prices of dry opium at harvest time, reported by farmers through the price-monitoring system, 2020-2021 (US dollars per kilogram)

Region	Average Dry Opium Price (US\$/kg) 2020	Average Dry Opium Price (US\$/kg) 2021	Change 2019-2020 (%)
Central	NA	NA	NA
Southern	NA	NA	NA
Eastern	102	113	11%
North-eastern	41	43	5%
Northern	42	53	26%
Southern-western	53	57	8%
Western	79	108	37%
National average weighted by production*	55	63	13%

Figure 17 Dry opium prices collected from traders in Nangarhar and Kandahar provinces (US\$/Kg), March 1997 - December 2021

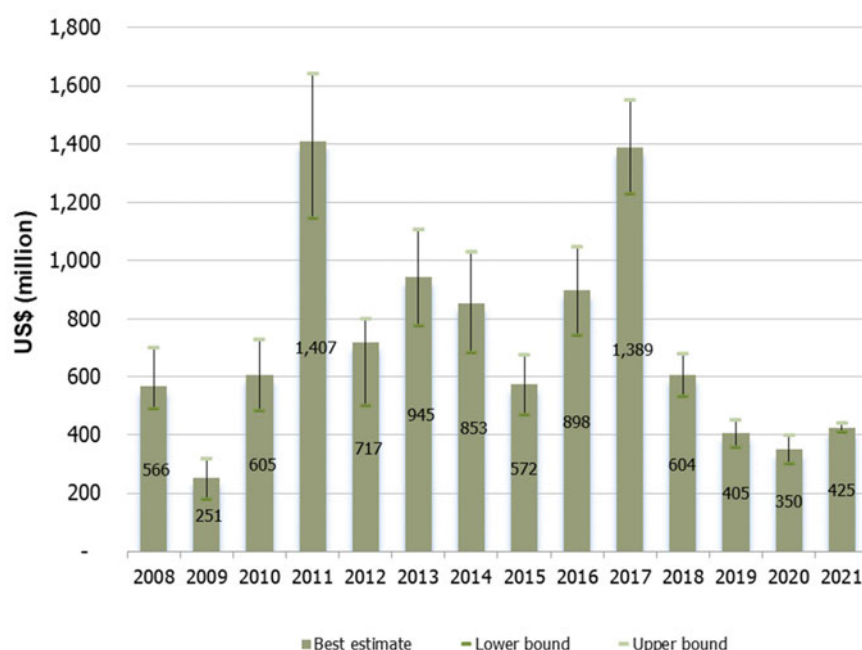


4.2 Farm-gate value of opium production

The estimated farm-gate value of opium production in 2021 amounted to US\$ 425 million (US\$ 390- 460 million) 23% increase compared to 2020.

The farm-gate value of opium is the income made by farmers from the 2021 opium harvest. Farmers in Hilmand, the country's largest opium-producing province, earned some estimated US\$ 250 million, which was equivalent to 59% of the total farm-gate value of opium production in Afghanistan in 2021.

Figure 18 Farm-gate value of opium production in Afghanistan, 2008-2021 (Million US dollars)



4.3 The value of opiates in Afghanistan

Opiate trafficking generates income for Afghans when it is sold to end-consumers domestically or exported. The overall (gross) income generated by domestic consumption, production and exports of opiates in Afghanistan was estimated at between US\$ 1.8 billion and US\$ 2.7 billion in 2021, which, when expressed as a share of the total economy, was equivalent to between 9 and 14 per cent of the GDP.¹⁴ In comparison to 2020, the value of the opiate economy slightly increased, which was mainly caused by an increase in the estimated export prices of opium in the countries neighbouring Afghanistan.¹⁵

Table 15 Estimated gross and net values of the opiate economy, 2021

	Gross value US\$ (rounded)	Value in relation to GDP
Value of opiate economy (gross)	1.8 – 2.7 billion	9 – 14%
Value of opiates potentially available for export	1.7 – 2.6 billion	9 – 13%
Value of domestic use market	43 million	0.20%

¹⁴ Estimated at USD 19.8 billion excluding opium for the Afghan year 2020. Source: NSIA, Afghanistan. In absence of updated data for 2021, 2020 data was used.

¹⁵ Based on a 3-year average of prices reported by Iran (Islamic Republic of), Pakistan and Tajikistan. In 2020, the value of the opiate economy was estimated to be between USD 1.4 and 2.5 billion.

Value of imported precursor substances	85 – 137 million	0.43 – 0.69%
Farm-gate value of opium	430 million (390 – 460 million)	2%
Value of production and trafficking after farm-gate to the border (net)	1.3 – 2.1 billion	6 – 11%

Note: Ranges are calculated based on different assumptions on the conversion of opium to morphine/heroin within Afghanistan and on the purity of the exported products. “Value of the opiate economy (gross)” is the sum of the value of the domestic market and the value of opiates believed to be exported, including the value of the imported precursor substance acetic anhydride. The net value of the opiate economy excludes the value of imported precursor substances. Details on the calculation and the underlying assumptions are provided in the methodology section. “Value of production and trafficking after farm-gate to the border (net)” is the value added in the opiate economy after the farm-gate value with costs for imported precursor substances subtracted. Figures are rounded; calculations are based on raw values.

5 Methodology

This chapter covers various methodological aspects regarding survey design and estimation procedure.

5.1 Estimation of area under opium poppy cultivation

Remote sensing methodologies have been used by UNODC since 2002 to monitor the extent of opium poppy cultivation in Afghanistan. Changes in the location of opium poppy cultivation and the increased security difficulties involved in accessing the area of interest require continuous improvements of the survey designs.

A sampling approach is used to cover those provinces where most of the poppy is found, whereas a targeted approach is used in provinces with a low level of opium poppy cultivation. “Targeted approach” means that a certain area of a province is fully covered by satellite imagery. Provinces without indication for opium poppy cultivation are covered by the village survey only.

From 2015, new and better satellite technology allowed for a major change in the study design: the size of the grid cells used for acquiring satellite imagery has been reduced from 10 x 10 km images to 5 x 5 km images. This change affected only provinces where a sampling approach was used; all other provinces were not affected by this change.

In 2021, out of 34 provinces in Afghanistan, 17 were sampled and 11 were targeted. The remaining 6 provinces were considered to be poppy-free based on information from the field. These provinces were not covered by the remote sensing survey but were covered by the village survey.

The same sampling locations have been used since 2019, which ensured high levels of comparability of the annual estimates.

Table 16 Area estimation method, by province, 2021

Region	Targeted approach	Sampling approach	Village survey only
Central	Kabul, Parwan, Logar	Day-Kundi	Panjshir, Wardak,
Eastern	Kapisa, Nuristan	Kunar, Nangarhar, Laghman	
Northern	Samangan	Faryab, Jawzjan, Balkh, Sari-Pul,	Bamyan
North-eastern	Baghlan, Takhar, Kunduz	Badakhshan	
Southern	Ghazni		Khost, Paktya, Paktika
Western	Hirat	Badghis, Farah, Ghor	
South-western		Hilmand, Kandahar, Uruzgan, Zabul, Nimroz,	

5.1.1 Study design

5.1.1.1 Sampling frame

The sampling frame was established by extracting the area of land potentially available for opium poppy cultivation in 17 provinces. This area was divided into regular 5 km by 5 km grids, which constituted the sampling frame. The final sampling frame, from which the satellite images were randomly selected, consisted of 7,477 cells. In the case of images that cut across provincial boundaries, only the part falling into a particular province was considered to be in that province.

The area available for agriculture in the sampling frame covers irrigated and rain-fed land. The total area in the 17 provinces was 48,313 km², which is equivalent to 38% of all potential agricultural land in Afghanistan. Potential land refers to all land available for cultivation and also includes land that is currently fallow.

Cells containing less than 0.25 km² of potential agricultural land were excluded from the sampling frame in order to reduce the likelihood of choosing cells with very little arable land. In total, the exclusions represented less than 1% of the total potential agricultural land.

5.1.1.2 Sample size determination

The total number of images to be selected in the sampled provinces was determined in 2015 with the goal to increase accuracy of the estimates and to save cost when compared to previous years.

The accuracy of area estimates depends on the proportion of land covered by satellite imagery and even more so on the number of images than can be acquired. With opium poppy cultivation being concentrated in hot spots and thus unevenly distributed across the agricultural land, information from a large, contiguous piece of land has less value than geographically evenly distributed, smaller pieces information. Costs associated with satellite imagery depends mainly on the total area covered (and not on the number of images). By using 5 x 5 km instead of 10 x 10 km images, at same costs four times the number of images can be acquired. Further details on the sample size determination methodology can be found in *Opium Survey, December 2015*, page 42.

5.1.1.3 Sample size allocation

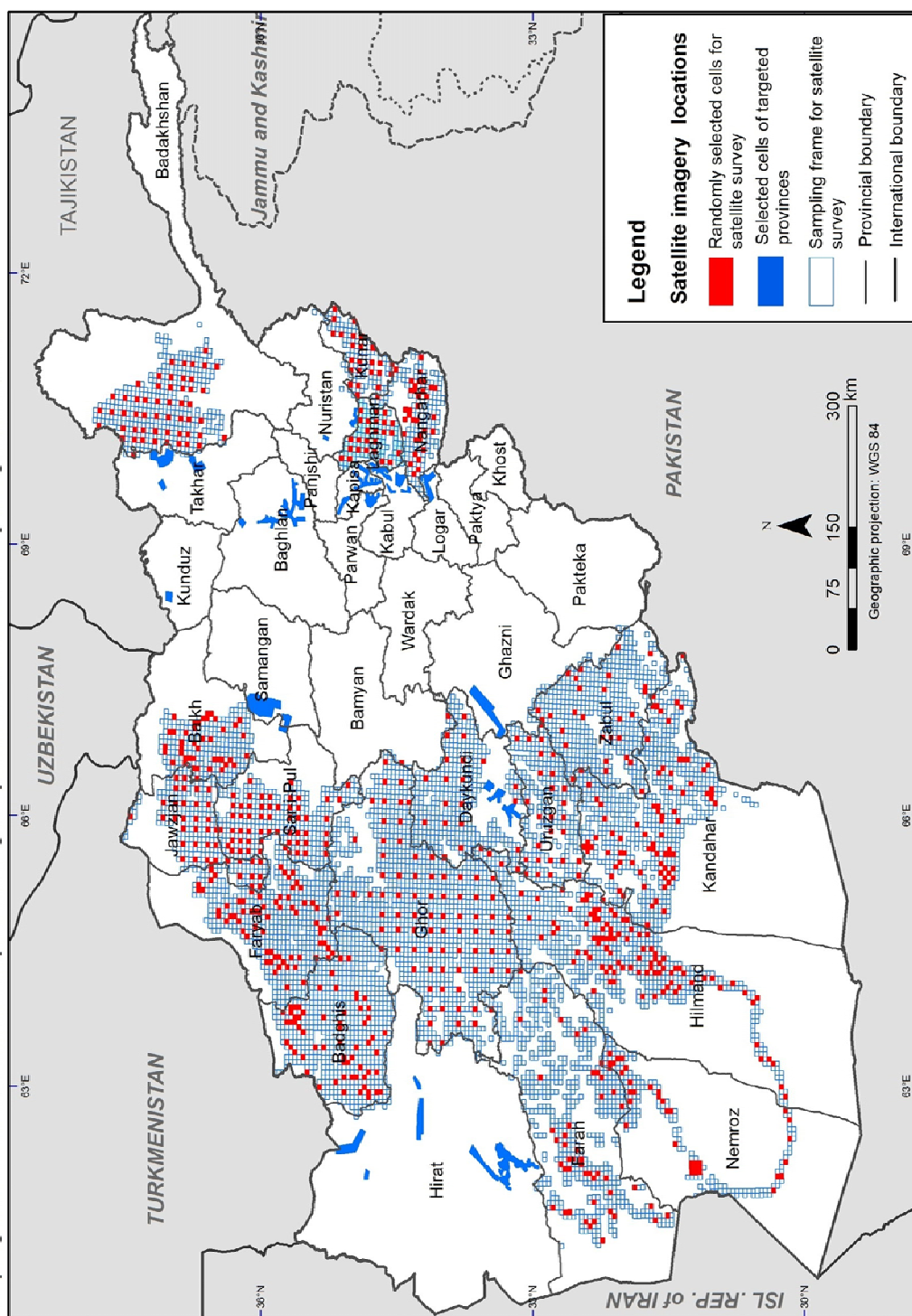
The available number n of images has been distributed to provinces h according to a so-called power allocation, which uses agricultural area as size measure. For provincial sample size n_h ,

$$n_h = n \frac{X_h^q CV_h}{\sum_{h=1}^H X_h^q CV_h}$$

where CV_h is the coefficient of variation of area under poppy cultivation in province h and X_h land available for agriculture in province h . This approach ensures that sample size depends on both the variability of poppy and the size of the province measured by agricultural land. After an empirical assessment, the smoothing parameter q , $0 \leq q \leq 1$, was set to 0.2. In addition, a minimum of 20 samples per provinces was set, which took effect in Day-Kundi and Kunar.

In 2021, high-resolution satellite images were acquired for 830 sampled locations 5 km by 5 km in size covering a total of 17 provinces.

Sampling frame & selected cells of sampled and targeted provinces for satellite survey in Afghanistan, 2021



Source: Government of Afghanistan - National monitoring system implemented by UNODC/NSIA
 Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
 The dotted line represents approximately the line of control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

Table 17 Sample size and agricultural land and sampling ratio, by province, 2021

Province	Total arable land (km2)	Frame	Effective sample size	Arable land in selected cells	% of arable land represented by selected cells
		# cells	# cells	(km2)	
Badakhshan	3,490	396	53	456	13%
Badghis	6,290	636	50	830	13%
Faryab	7,970	532	86	1426	18%
Jawzjan	3,440	294	39	530	15%
Laghman	263	103	25	61	23%
Ghor	1,615	1144	83	114	7%
Day Kundi	672	406	20	29	4%
Farah	2,820	604	46	480	17%
Hilmand	5,352	696	98	1226	23%
Kandahar	3,472	695	80	763	22%
Kunar	293	124	24	50	17%
Nangarhar	1051	181	26	334	32%
Nimroz	1,083	213	36	342	32%
Balkh	4577	256	40	865	19%
Saripul	3557	379	56	600	17%
Uruzgan	903	277	30	89	10%
Zabul	1,465	541	29	150	10%
Total	48,313	7,477	821	8,345	17%

5.1.1.4 Sample design

MCN/UNODC undertook an extensive simulation study which compared various sampling designs and estimation methods in order to determine the best (most accurate with a given number of samples) design for a certain situation.

Case studies were undertaken for Hilmand and Kandahar province. The sampling designs considered have been used in the past by MCN/UNODC:

- simple random sampling,
- probability proportional to size sampling (PPS), using agricultural area as a size measure,
- stratified random sampling using compact geostrata of equal size as strata,
- systematic random sampling.

Two estimation methods have been compared: a ratio estimator using agricultural area as auxiliary variable and the Horvitz-Thompson estimator.

The study concluded that for the two cases considered

- PPS performed best, and
- The ratio estimator is to be preferred for simple random sampling, systematic random sampling, and stratified random sampling. For PPS, it does not yield any improvements in accuracy.

The PPS builds on the correlation between the size measure and the variable of interest. In provinces where poppy and agricultural land are highly correlated, PPS is expected to perform best. In provinces, however, where poppy and agricultural land are only weakly correlated, PPS does not bring any advantages and might reduce accuracy.

Therefore, in Badghis, Balkh, Farah, Faryab, Hilmand, Kandahar, Nimroz and Zabul, PPS was applied. In the remaining provinces, systematic random sampling was used, a sampling design that

ensures an even geographical distribution of samples (see the “Opium poppy 2015 – Cultivation and production” for more details).

In more detail, in a PPS design without replacement a unit has a probability to be selected in the first draw of

$$pi = \frac{x_i}{\sum_{i=1}^N x_i}$$

where x is the size variable (agricultural land) in unit i , and N is the number of units that can be selected. The subsequent units have slightly modified inclusion probabilities. For drawing the samples and for calculating the inclusion probabilities the statistical software *R* (package *sampling*) was used.

Since agricultural area tends to be concentrated in one or more clusters in a province, PPS sampling without further stratification would lead to a concentration of samples in a few spots and possibly do not cover every district. Therefore, in all PPS provinces, the sample was stratified by district.

In the remaining provinces, a one-stage systematic random sampling approach was employed in which a sampling rule was applied that ensured good geographic coverage. Starting from a randomly chosen cell, every k th element from then onwards was chosen, where k is determined by the number of cells in the frame and the desired sample size (the actual sample size might differ slightly).

In *Nangarhar* province, the districts Dara-e-Nur, Kuzkunar, Kama, Behsud, Jalalabad and partially Surkhrod were excluded from the frame.

5.1.2 Area estimation in sampled provinces

The estimation of the extent of opium poppy cultivation is a ratio estimate¹⁶ for each of the provinces, using potential agricultural land as an auxiliary variable. The national estimate was obtained by adding up the provincial estimates in what is known as a separate ratio estimate.

In provinces where systematic random sampling was applied, the area of opium poppy cultivation, Y_k , within province k , is estimated as:

$$Y_k = X \frac{\sum_{i=1}^{n_k} y_i}{\sum_{i=1}^{n_k} x_i}$$

where n_k is the number of satellite image locations within the province; y_i is the area of poppy cultivation in image i ; x_i is the area of land potentially available for poppy cultivation in image i , and X is the total potential land available for poppy cultivation in province k .

In PPS provinces, where units are selected with unequal inclusion probability, a slightly different ratio estimate was used that incorporates the inclusion probability (Horvitz-Thompson estimator).

5.1.2.1 Uncertainty

In the PPS provinces the confidence intervals were calculated following statistical practice.¹⁷

In all remaining provinces no unbiased estimator for the variance was available; confidence intervals were approximated by assuming simple random sampling. The confidence intervals therefore slightly overestimate the uncertainty of the estimates.

¹⁶ The ratio estimator did not outperform the Horvitz Thompson estimator in the PPS provinces. The ratio estimator was applied in all provinces for reasons of consistency and to account for possible updates of the agricultural area in future years.

¹⁷ See, e.g. Cochran, W. G., *Sampling techniques*, John Wiley & Sons (2007).

Table 18 Area estimates of sample provinces with 95% confidence interval, 2021 (Hectares)

Province	Point estimate (Hectares)	Lower bound (Hectares)	Upper bound (Hectares)
Badakhshan	3,561	929	6,194
Badghis	4,904	2,192	7,617
Balkh	2,177	436	3,919
Day kundi	792	247	2,922
Farah	11,461	5,227	17,696
Faryab	4,778	1,722	7,835
Ghor	1,451	515	2,387
Hilmand	109,778	100,223	119,333
Jawzjan	708	221	1,194
Kandahar	16,971	12,418	21,525
Kunar	626	286	1,614
Laghman	987	176	1,798
Nangarhar	2,027	1,204	2,850
Nimroz	2,304	1,385	3,224
Saripul	1,975	1,033	2,917
Uruzgan	9,746	5,806	13,685
Zabul	980	258	3,646

To express the uncertainty associated with the national area estimation, which includes the provinces covered by the targeted approach and the sample provinces, but excludes provinces with an estimate of less than 100 hectares (which are considered “poppy-free” and not counted), a range was calculated by adding the poppy area figures of the target provinces to the upper and lower limits of the 95% confidence interval at the national level.

5.1.3 Area estimation in target provinces

The consensus view of those working in Afghanistan was that the MCN/UNODC surveillance system developed in the provinces can identify sites where poppy was grown, with further inputs being obtained from the survey of village headmen. Fieldworkers visited potential poppy-growing sites to confirm the situation and provided GPS references for the sites. If geographical clusters of sites were identified, targeted satellite images were obtained to measure the areas involved. The total poppy area of a target province is equal to the poppy area measured on the imagery without any further calculation. For a list of provinces for which the target approach was used see respective table.

In provinces where satellite images were targeted, the estimated area under opium poppy cultivation is not affected by sampling errors, although they may be affected by the omission of areas with very little cultivation. Area estimates of target provinces should therefore be considered as a minimum estimate.

5.1.4 District level estimation

District level results are indicative only. For district level estimation all cells are used which have the majority of agricultural area in that district. That means that in certain cases, agricultural area and poppy cultivation is accounted for in a neighbouring district and not within the district where cultivation occurred. This is, however, in most cases set off by those cells, where the contrary is the case.

5.1.5 Accuracy assessment

Due to the difficult security situation in many parts of Afghanistan, which prevented surveyors from carrying GPS and mapping equipment, an insufficient number of ground segments could be visited in order to conduct a systematic accuracy assessment.

5.1.6 Estimation of the net cultivation area

The area figure presented is the net harvestable opium poppy cultivation area. The effect of poppy eradication activities was taken into account based on data from the eradication verification survey,

which provides exact GPS coordinates of all eradicated fields supplemented with additional information. The gross cultivation areas would be the net cultivation plus eradication.

In provinces where the poppy area is estimated with a sampling approach, the first step is to calculate the gross poppy cultivation area. The total area eradicated in those provinces is then deducted from the mid-point estimate of the provincial cultivation estimate to obtain the net cultivation area. If eradication activities were carried out after the date of the image acquisition, no adjustment is necessary as the poppy present in the image reflects the gross poppy area. If eradication activities were carried out in a sample block before the date of the image acquisition, the area interpreted as poppy would not reflect the gross area. Therefore, the eradicated fields are added to the interpreted fields. The adjusted poppy area figure for the block is then used for the provincial estimate.

In provinces where the poppy areas is estimated with a targeted approach (census), eradication activities that happened before the date of the image acquisition are already reflected, as these fields no longer appear as poppy in the image. Fields that were eradicated after the date of the images acquisition are simply deleted.

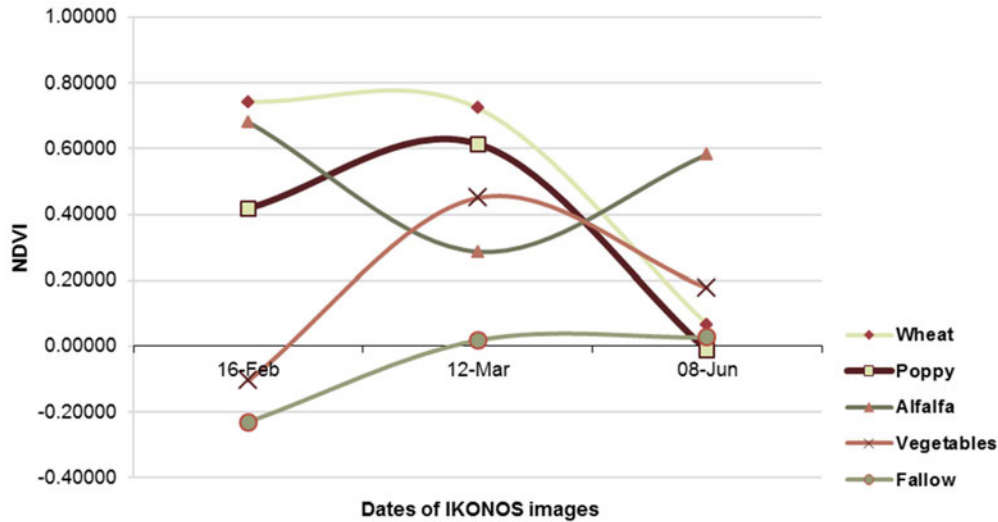
5.2 Satellite image interpretation

5.2.1 Acquisition of satellite images

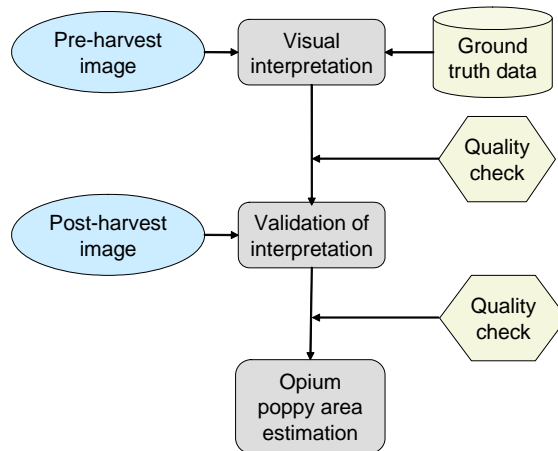
The acquisition of satellite images at the appropriate growth stage of the opium poppy is key to the successful identification of opium poppy fields on satellite images. Satellite data is collected at two stages: the pre-harvest (flowering) stage and the post-harvest (post-lancing) stage. In recent years, detailed information on the crop growth cycle of each district has been collected in the form of a phenological chart, which is useful for deciding on appropriate dates for satellite data acquisition. First-dated images of the Southern, Eastern and Western regions are collected during March and April due to the early cultivation and maturity of crops in those regions. The crop growth cycle begins later as one goes northward. Images of the North and North-eastern region are acquired during May, June and July. Second-dated satellite images are collected approximately two months after the first images are collected.

The normal time window for satellite data acquisition is one month, depending on the scheduled passing of satellite and weather conditions. The time window for first-dated image acquisition begins at the full flowering stage and continues through the capsule stage. Second-dated image acquisition begins towards the end of the lancing stage and continues until the opium poppy fields are ploughed. Images acquired in the middle of the prescribed time window facilitate optimum discrimination between opium poppy and other crops.

The figure below illustrates the spectral characteristics (expressed in a Normalized Difference Vegetation Index; NDVI) of opium poppy and other crops between February and June. Wheat and opium poppy have the same growth cycle between March and June, as illustrated. The spectral differences between those two crops are more pronounced in February, which marks the beginning of the capsule stage of the crop in this example. Poppy fields are ploughed immediately after the harvest, whereas wheat fields are not. That is why two-dated images (pre-harvest and post-harvest) are collected for the same location.

Figure 19 Spectral reflectance of opium poppy and other crops

The figure above illustrates the growth cycles of opium poppy, wheat and clover from February to June, with the help of ground photographs. Note that maximum visual discrimination between opium poppy and other crops is possible during the flowering/capsule stage and after capsule lancing. The different phenological stages described above are shown in the figure on the previous page (field photographs of opium poppy, wheat and clover on different dates).

Figure 20 Image classification methodology for estimating opium poppy cultivation area

5.2.2 Interpretation of opium poppy cultivation from satellite images

First-dated images were acquired during the flowering or capsule stage and second-dated images were acquired after the opium harvest. For example, wheat appears mostly in bright red on the first date image in false colour composite (full coverage with vegetation appears in red; bare soil in grey/green), while opium poppy fields are shown in tones of pink. Although there can be some confusion between opium poppy and wheat in the first-dated images, the acquisition of second-

dated images makes it possible to distinguish opium poppy from other crops, because the opium poppy crop has been harvested and the fields appear in grey/green.

Visual interpretation was used to delineate opium poppy fields by interpreting PLEIADES images covering a 5 km by 5 km area. Ortho-rectified PLEIADES images of 0.5 m resolution (PAN-sharpened) were used for this purpose. Opium poppy was initially identified using first-dated high resolution images. Ground truth information collected in the form of segment maps and GPS points was also useful in identifying opium poppy fields. The interpretation based on first-dated images was improved using patterns of observation in second-dated images. Ground photos of the poppy fields were used in the provinces of in Kabul, Kapisa, Kunar, Laghman, Nangarhar Faryab, Baghlan, Badakhshan, Jawzjan and Sari-Pul provinces. These photographs were tagged by latitude and longitude and facilitated to locate the poppy areas on satellite images, and were very helpful in confirming the poppy areas in the satellite images. Poppy field boundaries were delineated by an on-screen digitization method.

5.2.2.1 Band combination for opium poppy identification

Two kinds of band combination were used to detect opium poppy. True-colour combination (blue, green, red) was used in areas where land use is dominated by opium (for example, Hilmand and Kandahar) and in cases where images were obtained during the flowering and lancing stages of opium poppy. False-colour combination (infra-red, red, green) was used in almost all cases. Analysts used both combinations simultaneously to optimize discrimination between opium poppy and other crops.

Some of the images could not be acquired at the appropriate time due to weather conditions and/or the time at which the satellite passed. The delayed acquisition of images makes it difficult to detect opium poppy, since fields may be at the senescence stage due to the lancing of capsules and can therefore be confused with fallow fields. In such cases, second-dated images are often useful in confirming opium poppy fields, since harvest patterns are different for wheat and opium poppy.

5.2.2.2 Advantage of two-dated images

In provinces and areas where interpretation was challenging, second-date imagery was obtained. The second-dated images were useful to distinguish poppy from barley, wheat and grapes in certain provinces. The second-dated (post-harvest) images were useful in confirming whether the opium poppy on the first-dated images had been correctly identified. Image acquisition at two different times (pre- and post-harvest) has been proven to be essential in such cases.

5.2.2.3 Quality control

A quality control mechanism was applied to the image interpretation process, with each analyst's work being checked by two other experts. Both first-dated and second-dated images were cross-checked.

All fields determined as likely to be under opium poppy cultivation (potential opium poppy fields) were delineated on the basis of the interpretation of first-dated satellite imagery. In some cases a second-dated image was acquired for the purpose of confirmation. The corrections involved a few commissions and omissions.

5.3 Opium yield and production

The representativeness of the yield measurements was increased by increasing the number of observations.

5.3.1 Estimating opium yield

The relationship between poppy capsule volume per square metre and dry opium yield is used to estimate opium production.¹⁸ It takes the form of a non-rectangular hyperbola.

¹⁸ UNODC Guidelines for yield assessment of opium gum and coca leaf from brief field visits, UN New York, 2001, ST/NAR/33. See also UNODC (2003): Limited opium yield assessment surveys. Technical report: Observations and findings. Guidance for future activities. In: Scientific and Technical Notes, SCITEC/19, December 2003.

Non-rectangular hyperbola formula for opium yield as function of capsule volume:

$$Y = [(VC + 1495) - ((VC + 1495)^2 - 395.259 VC)^{0.5}] / 1.795$$

where

Y = Dry opium gum yield (kg/ha), and

VC = Mature capsule volume (cm³/m²).

In the yield survey, data on the number of yield capsules per plot and capsule volume are collected. The survey follows the procedure established in the UNODC *Guidelines for Yield Assessment*.

An imaginary transect was drawn on each surveyed field, along which three one-metre square plots were selected. In each plot, the number of flower buds, flowers, immature capsules and mature capsules that were expected to yield opium were counted, and the diameter and height of 10 to 15 opium-yielding capsules were measured with a calliper. The capsule volume per square metre was calculated with these data and entered into the formula for the yield calculation. Each plot thus provided one yield observation. The simple average of the three plots in a field is the field yield. The simple average of all fields in a geographical area is the average yield in the respective area. A range was calculated to express the uncertainty of the yield estimate due to sampling with the 95% confidence interval.

5.3.2 Size of the yield survey and data quality

The surveyors carrying out the yield survey in the field have to spend long periods of time for capsule measurements because of the stringent protocols that have to be followed. There are challenges of other nature like approachability of the sample villages due to difficult terrain as well poor security in remote areas. These challenges have restricted the size of representative samples.

In 2021 a mixed approach was adopted to increase the representativeness of the samples collected. It was decided to first attempt the yield measurements in the sampled villages, however in case of failure to collect the samples an opportunity based approach would be adopted and the sampled villages will be replaced by non-randomly chosen villages.

To carry out a representative survey below step were followed:

- All poppy cultivated districts were categorised into six zones based on altitude, soil type, agriculture type and visual appearance of the crops using previous years high resolution satellite imagery.
- The poppy cultivated villages were used as sample frame within the six zones.
- 192 villages were selected using random sample in six zones with equal distribution.

Due to security challenges only 30% of sampled villages could be surveyed, the remaining 70% of villages had to be replaced with non-representative samples. The comparison of number of samples by year in table 28 indicates substantial increase in number of samples in 2021 as compared to previous years.

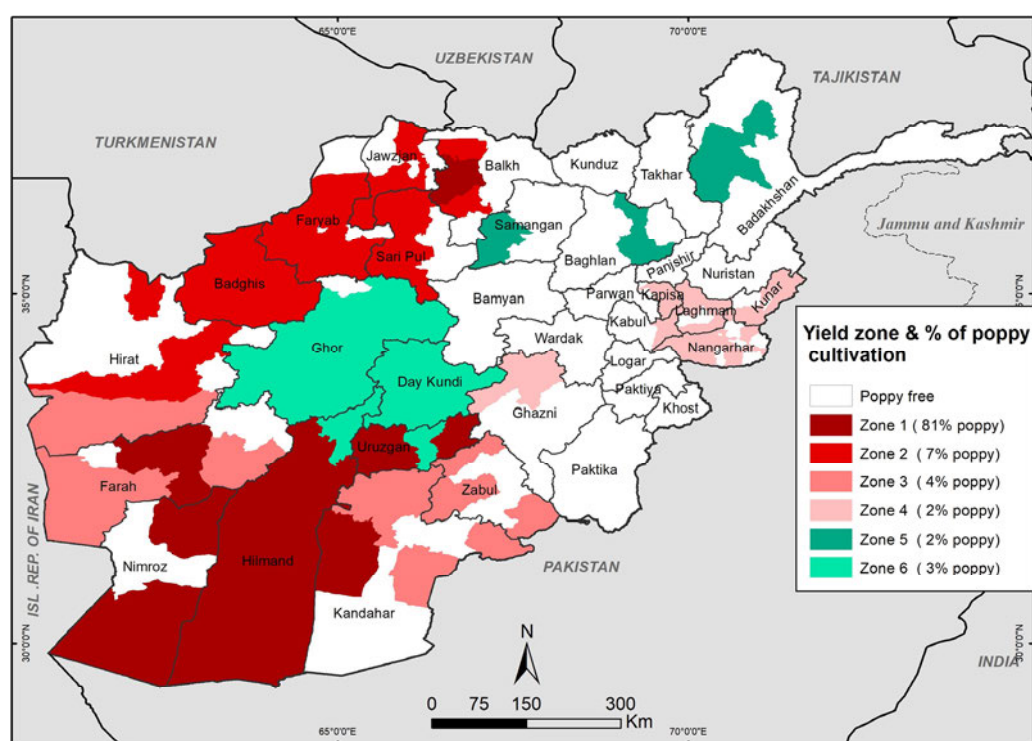
Table 28 Yield survey villages and fields surveyed (all data), 2011-2021

Region	2016	2017	2018	2019	2020	2021
Number of Villages	76	79	73	73	NA	162
Number of fields (max 3 Per village)	209	222	191	216	NA	482
Number of plots (3 per field)	620	631	560	634	NA	1442
Number of capsules measured	5,388	5,682	4,706	5,689	NA	13,428

The estimated yield in 2021 is 37% more than in 2020 which was estimated by visually ranking using opium poppy fields according to the quality of crops on the field on satellite imagery.

Table 19 Estimated zonal yields with 95% confidence intervals, 2021 (Kilograms per hectare)

Yield zone	Best estimate	Lower bound	Upper bound
1	40.0	38.5	41.4
2	22.2	19.9	24.4
3	40.2	38.1	42.3
4	39.5	37.9	41.2
5	38.9	37.5	40.4
6	32.6	29.1	36.1
National weighted by opium poppy cultivation	38.5	37.3	39.7

Figure 21 Opium yield survey zones and percentage of opium poppy cultivation in each zone, 2021

Source: Government of Afghanistan - National monitoring system implemented by UNODC/NSIA
 Note: The boundaries and names shown and the designation used on this map do not imply official endorsement or acceptance by the United Nations.
 Dotted line represents approximately the line of control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

5.4 Average farm-gate price and farm-gate value of opium production

Since 2009, farm-gate prices at harvest time have been derived from the opium price monitoring system and refer to the month when opium harvesting took place in the different regions of the country, which is thought to reflect opium prices at harvest time better. To calculate the national average price, regional price averages were weighted by regional opium production. The opium price in the Central region was calculated from the annual village survey, as there is no monthly opium price monitoring in that region.

The farm-gate value of opium production is the product of potential opium production at the national level multiplied by the weighted average farm-gate price of dry opium at harvest time. The upper and lower limits of the range of the farm-gate value were determined by using the upper and lower opium production estimate.

Annex I Indicative district level estimates of opium poppy cultivation, 2010-2021 (Hectares)

Province	District	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Badakhshan	Arghanj Khwah	-	-	-	-	-	10	3	11	5	-	1	26
Badakhshan	Argo	327	617	610	565	2,046	1,273	2,648	3,658	3,828	2,142	3,420	2,015
Badakhshan	Baharak	-	-	43	322	41	271	0	0	-	0	0	-
Badakhshan	Darayim	289	662	898	684	1,282	1,530	1,744	1,957	1,749	1,144	1,422	613
Badakhshan	Darwaz-i Payin (mamay)	-	-	-	-	-	-	-	-	-	-	-	-
Badakhshan	Darwaz-i Bala (nesay)	-	-	-	-	-	-	-	-	-	-	-	-
Badakhshan	Faiz abad (Provincial Center)	10	64	7	48	65	4	1	10	1	-	3	2
Badakhshan	Eshkashim	-	-	-	-	-	-	-	-	-	-	-	-
Badakhshan	Jurm	2	43	98	196	85	50	23	46	17	569	564	21
Badakhshan	Khash	4	46	-	-	-	152	330	640	281	67	72	17
Badakhshan	Khwahan	-	-	-	5	21	7	40	61	-	8	-	-
Badakhshan	Kishim	204	73	45	141	117	35	674	1,128	825	380	744	588
Badakhshan	Kohistan	-	-	2	0	11	8	-	-	-	-	-	-
Badakhshan	Kuf Ab	-	-	-	0	-	-	-	-	-	-	-	-
Badakhshan	Kiran wa Munjan	-	-	-	0	-	-	-	-	-	-	-	-
Badakhshan	Raghistan	-	-	19	9	26	-	44	61	49	21	-	-
Badakhshan	Shahri Buzurg	3	3	36	148	59	37	4	35	66	7	10	6
Badakhshan	Shighnan	-	-	-	0	-	-	-	-	-	-	-	-
Badakhshan	Shiki	-	-	-	0	-	-	-	-	-	-	-	-
Badakhshan	Shuhada	-	-	12	86	236	-	-	-	-	-	-	-
Badakhshan	Tagab	-	-	22	36	101	57	167	63	44	6	-	33
Badakhshan	Tashkan	163	145	73	107	92	595	582	570	697	327	125	124
Badakhshan	Wakhan	-	-	-	0	-	-	-	-	-	-	-	-
Badakhshan	Wardooj	1	1	-	0	-	-	10	15	34	8	-	-
Badakhshan	Yafat-i-Sufia	97	50	32	18	12	25	23	52	107	26	33	117
Badakhshan	Yamgan	-	1	-	5	10	-	4	3	-	-	-	-
Badakhshan	Yawan	-	-	30	-	-	2	2	-	-	-	-	-
Badakhshan	Zaybak	-	-	-	-	-	-	-	-	-	-	-	-
Badakhshan Total		1,100	1,705	1,927	2,374	4,204	4,056	6,298	8,311	7,703	4,704	6,395	3,561
Badghis	Ab Kamari	16	5	14	24	-	1,996	71	281	208	43	642	90
Badghis	Ghormach	486	1,485	1,005	2,395	1,009	6,855	17,594	Part of Faryab				
Badghis	Jawand	130	106	187	850	797	683	940	2,303	1,358	503	3,688	1,629
Badghis	Muqur	81	9	61	26	47	86	1,062	2,097	324	314	507	121
Badghis	Bala Murghab	2,055	284	870	-	3,762	1,417	12,372	18,202	4,682	6,225	11,174	2,488
Badghis	Qadis	135	92	152	264	57	1,331	3,185	1,802	377	538	6,365	557
Badghis	Qala-i-Now (Provincial Center)	55	9	75	37	49	23	11	38	26	8	26	19
Badghis Total		2,958	1,990	2,363	3,596	5,721	12,391	35,234	24,723	6,973	7,631	22,402	4,904
Baghlan	Andarab	-	18	5	3	4	8	92	91	54	14	56	17
Baghlan	Baghlan *	-	-	-	-	-	-	-	-	-	-	-	-
Baghlan	Baghlan-i-Jadeed	-	-	-	-	-	-	-	-	-	-	-	-
Baghlan	Burka	-	-	-	4	1	0	4	11	25	0	2	1
Baghlan	Dahana-i- Ghuri	-	-	-	-	-	-	-	-	-	-	-	-
Baghlan	Deh Salah	-	113	33	37	60	68	351	473	690	111	223	49
Baghlan	Dushi	-	-	-	-	-	-	-	-	-	-	-	-
Baghlan	Firing Wa Gharu	-	-	-	-	-	-	-	-	-	-	-	-
Baghlan	Gozargah-i-Noor	-	-	-	-	-	-	-	-	-	-	-	-
Baghlan	Kahmard *	-	-	-	-	-	-	-	-	-	-	-	-
Baghlan	Khinjan	-	-	-	-	-	-	-	-	-	-	-	-
Baghlan	Khost Wa Firing	-	-	-	-	-	-	-	-	-	-	-	-
Baghlan	Khwajah Hijran (Jalgah)	-	-	-	-	-	-	84	57	66	12	30	16
Baghlan	Nahrean	-	-	-	-	-	-	-	-	-	-	-	-
Baghlan	Pul-i-Hisar	-	30	139	97	103	104	319	424	242	139	263	105
Baghlan	Pul-i-Khumri (Provincial Center)	-	-	-	-	-	-	-	-	-	-	-	-
Baghlan	Talah wa Barfak	-	-	-	-	-	-	-	-	-	-	-	-
Baghlan Total		p-f	161	177	141	168	180	849	1,057	1,076	275	572	188
Balkh	Balkh	-	-	-	-	-	-	5	2,334	4,855	2,647	2,030	678
Balkh	Chahar Bolak	-	-	-	10	-	9	316	4,007	1,515	1,363	1,453	696
Balkh	Chahar Kent	-	-	-	-	-	-	-	-	-	-	-	-
Balkh	Chimtal	-	-	-	400	-	195	1,764	5,768	1,974	2,782	2,354	687
Balkh	Dowlatabad	-	-	-	-	-	-	-	1	7	12	-	1
Balkh	Dehdadi	-	-	-	-	-	-	-	6	154	125	19	23
Balkh	Kaldar (Shahrak-i-Haratan)	-	-	-	-	-	-	-	-	-	-	-	-
Balkh	Khulm	-	-	-	-	-	-	-	-	-	-	-	-
Balkh	Kishindeh	-	-	-	-	-	-	-	-	-	-	-	-
Balkh	Marmul	-	-	-	-	-	-	-	-	-	-	-	-
Balkh	Mazar-i-Sharif	-	-	-	-	-	-	-	-	-	-	-	-
Balkh	Nahr-i-Shahi	-	-	-	-	-	-	-	-	-	-	-	-
Balkh	Sholgarah	-	-	-	-	-	-	-	-	27	113	90	93
Balkh	Shortepa	-	-	-	-	-	-	-	-	-	-	-	-
Balkh	Sharak-e-Hayratan	-	-	-	-	-	-	-	-	-	-	-	-
Balkh	Zari	-	-	-	-	-	-	-	-	-	-	-	-
Balkh Total		p-f	p-f	p-f	410	p-f	204	2,085	12,116	8,532	7,042	5,946	2,177

Province	District	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Bamyan	Bamyan (Provincial Center)	-	-	-	-	-	-	-	-	-	-	-	-
Bamyan	Kahmard	-	-	-	-	-	-	-	-	-	-	-	-
Bamyan	Panjab	-	-	-	-	-	-	-	-	-	-	-	-
Bamyan	Saighan	-	-	-	-	-	-	-	-	-	-	-	-
Bamyan	Shebar	-	-	-	-	-	-	-	-	-	-	-	-
Bamyan	Waras	-	-	-	-	-	-	-	-	-	-	-	-
Bamyan	Yakawlang	-	-	-	-	-	-	-	-	-	-	-	-
Bamyan Total		p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f
Day Kundi	Gizab	722	621	684	727	Part of Uruzgan							
Day Kundi	Ishtarlay	9	9	9	6	8	16	-	35	34	-	4	48
Day Kundi	Kajran	622	153	288	700	320	124	273	442	310	318	315	363
Day Kundi	Khedir	5	8	9	4	6	24	6	53	15	-	1	65
Day Kundi	Kiti	134	151	14	-	-	13	-	290	74	-	40	70
Day Kundi	Mir Amor	19	22	5	12	16	72	15	34	56	9	0	19
Day Kundi	Nili (Provincial Center)	5	9	16	3	-	-	13	141	117	33	4	5
Day Kundi	Sang-i-Takht	10	15	8	30	150	43	-	47	50	7	16	10
Day Kundi	Shahristan	21	13	25	53	87	89	67	466	91	216	170	212
Day Kundi Total		1,547	1,003	1,058	1,536	587	381	374	1,508	747	583	550	792
Farah	Anar Darah	1	9	3	314	104	-	2	1	1	-	1	-
Farah	Bakwah	1,936	800	5,822	8,844	12,651	5,567	1,503	2,040	907	445	723	301
Farah	Bala Buluk	2,586	3,157	3,951	1,947	2,730	7,033	2,062	3,490	3,887	3,102	4,548	4,936
Farah	Delaram	4,404	4,263	8,899	Part of Nimroz								
Farah	Farah (Provincial Center)	51	-	129	4,451	4,760	128	72	47	34	5	21	21
Farah	Gulistan	2,661	4,565	3,920	3,759	2,000	1,065	841	1,102	558	318	924	692
Farah	Khaki-Safed	645	1,103	2,220	1,186	1,726	4,562	2,715	3,998	4,265	1,589	2,445	3,541
Farah	Lash-i-Juwayn	3	6	2	179	27	7	10	8	1	5	5	6
Farah	Pur Chaman	2,175	3,512	2,164	230	930	365	315	642	292	-	5	-
Farah	Pushrod	61	46	505	2,521	2,214	2,192	1,517	1,499	968	1,560	1,810	1,960
Farah	Qala-i-Kah	11	39	117	914	354	186	64	17	3	36	-	1
Farah	Shib Koh	18	-	-	149	17	1	-	4	-	54	1	4
Farah Total		14,552	17,499	27,733	24,492	27,513	21,106	9,101	12,846	10,916	7,113	10,483	11,461
Faryab	Almar	-	-	-	-	-	-	52	1,448	938	519	1,625	585
Faryab	Andkhoy	-	-	-	-	-	-	-	-	-	-	-	-
Faryab	Bil Chiragh	-	-	-	-	-	-	1	-	-	-	-	-
Faryab	Dowlat abad	-	-	-	-	-	-	-	-	6	84	354	143
Faryab	Gurziwan	-	75	-	46	40	108	39	-	214	2	2	7
Faryab	Khani ChaharBagh	-	-	-	-	-	-	-	-	-	-	-	-
Faryab	Khawajah Sabz Posh Wali	-	-	-	-	-	-	-	-	27	40	69	141
Faryab	Kohistan	-	49	-	65	69	69	89	289	571	38	4	7
Faryab	Maimanah	-	-	-	-	-	-	-	-	-	-	-	-
Faryab	Pashtun Kot	-	9	-	1	-	-	-	-	587	18	671	503
Faryab	Qaram Qul	-	-	-	-	-	-	-	-	-	-	-	-
Faryab	Qaisar	-	13	-	46	102	983	2,742	8,294	1,429	221	752	237
Faryab	Qurghan	-	-	-	-	-	-	-	-	-	-	-	-
Faryab	Shirin Tagab	-	-	-	-	-	-	-	-	468	316	108	88
Faryab	Ghormach	-	-	-	-	-	-	-	12,766	3,935	5,383	9,497	3,067
Faryab Total		p-f	146	p-f	158	211	1,160	2,923	22,797	8,175	6,621	13,083	4,778
Ghazni	Ab Band	-	-	-	-	-	-	-	-	-	-	-	-
Ghazni	Ajistan	-	-	-	-	-	-	-	1,022	370	123	289	126
Ghazni	Andar	-	-	-	-	-	-	-	-	-	-	-	-
Ghazni	Bahram-e Shahid (Jaghathu)	-	-	-	-	-	-	-	-	-	-	-	-
Ghazni	Deh Yak	-	-	-	-	-	-	-	-	-	-	-	-
Ghazni	Gelan	-	-	-	-	-	-	-	-	-	-	-	-
Ghazni	Ghazni (Provincial Center)	-	-	-	-	-	-	-	-	-	-	-	-
Ghazni	Giro	-	-	-	-	-	-	-	-	-	-	-	-
Ghazni	Jaghathu *	-	-	-	-	-	-	-	-	-	-	-	-
Ghazni	Jaghuri	-	-	-	-	-	-	-	-	-	-	-	-
Ghazni	Khwajah Omari	-	-	-	-	-	-	-	-	-	-	-	-
Ghazni	Malistan	-	-	-	-	-	-	-	-	-	-	-	-
Ghazni	Muqur	-	-	-	-	-	-	-	-	-	-	-	-
Ghazni	Nawa	-	-	-	-	-	-	-	-	-	-	-	-
Ghazni	Nawur	-	-	-	-	-	-	-	5	3	-	1	1
Ghazni	Qara Bagh	-	-	-	-	-	-	-	-	-	-	-	-
Ghazni	Rashidan	-	-	-	-	-	-	-	-	-	-	-	-
Ghazni	Waghaz	-	-	-	-	-	-	-	-	-	-	-	-
Ghazni	Wali Muhammad Shadid Khugyani	-	-	-	-	-	-	-	-	-	-	-	-
Ghazni	Zanakhan	-	-	-	-	-	-	-	-	-	-	-	-
Ghazni Total		p-f	p-f	p-f	p-f	p-f	p-f	p-f	1,027	373	123	290	127
Ghor	Chaghcharan (Provincial Center)	-	-	71	72	222	397	356	886	1,191	-	490	128
Ghor	Chahar Sadah	-	-	-	64	95	-	182	13	-	-	0	-
Ghor	Dowlatyar	-	-	5	82	117	154	235	251	390	142	69	137
Ghor	Do Lainah	-	-	16	9	17	11	83	127	1	13	5	5
Ghor	Lal Wa Sarjantal	-	-	-	-	9	280	-	192	221	139	180	44
Ghor	Pasaband	-	-	-	-	-	633	258	1,426	781	907	412	224
Ghor	Saghar	-	-	-	-	-	8	-	6	-	-	7	7
Ghor	Shahrak	-	-	33	37	41	62	99	214	231	106	59	23
Ghor	Taywara	-	-	-	-	-	126	82	1,019	523	574	1,602	876
Ghor	Tuluk	-	-	-	-	-	44	-	138	112	92	14	7
Ghor Total		p-f	p-f	125	264	493	1,721	1,222	4,228	3,574	1,960	2,848	1,451

Province	District	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Hilmand	Baghran	4,049	6,739	2,788	4,037	4,553	2,190	4,408	4,318	3,255	1,857	2,340	2,232
Hilmand	Dishu	119	481	1,601	4,161	3,338	3,528	4,391	6,675	5,772	105	560	300
Hilmand	Garm Ser	6,333	4,342	1,246	4,527	8,394	10,406	10,574	13,211	11,665	6,388	9,372	9,443
Hilmand	Kajaki	3,299	6,435	9,065	10,611	10,836	11,564	8,490	14,447	14,782	9,861	10,831	10,115
Hilmand	Lashkargah (Provincial Center)	2,014	649	1,469	1,828	2,562	2,089	1,935	4,669	3,620	2,039	1,583	1,971
Hilmand	Musa Qala	8,415	10,340	7,235	10,586	8,320	6,974	6,112	13,474	15,522	12,444	15,624	14,452
Hilmand	Nad Ali	18,646	5,413	8,038	19,136	22,256	17,022	12,429	27,398	21,396	15,091	24,366	24,362
Hilmand	Marja	-	2,629	2,046	part of Nad Ali								
Hilmand	Naher-i-Saraj	11,517	12,638	22,468	18,701	16,984	11,759	11,050	18,464	17,981	14,733	17,365	15,663
Hilmand	Nowzad	2,845	4,694	10,822	11,944	9,839	5,576	7,256	16,972	20,366	13,848	15,798	1,955
Hilmand	Nawa-i-Barukzai	1,328	1,610	41	97	319	2,176	559	4,064	444	561	1,315	14,106
Hilmand	Reg-i-Khan Nishin	2,292	2,120	2,718	5,912	6,781	7,352	8,352	10,251	10,445	2,235	4,195	3,901
Hilmand	Sangin Qala	2,631	2,941	2,882	3,709	5,349	3,731	2,955	5,667	5,421	4,194	4,386	3,946
Hilmand	Washer	1,555	2,275	2,757	5,445	3,710	2,076	1,759	4,409	6,128	7,371	7,863	7,332
Hilmand Total		65,045	63,307	75,176	100,693	103,240	86,443	80,273	144,018	136,798	90,727	115,597	109,778
Hirat	Adrasan	-	-	-	3	10	5	1	0	1	0	4	8
Hirat	Chiisht-i-Sharif	-	-	-	-	-	-	-	-	-	-	-	-
Hirat	Fersi	-	-	-	-	-	-	-	-	-	-	-	-
Hirat	Ghoryan	-	-	-	-	-	-	-	-	-	-	-	-
Hirat	Gulran	-	-	-	-	-	-	-	-	8	-	-	-
Hirat	Gozara	-	-	-	-	-	-	-	-	1	0	-	-
Hirat	Hirat	-	-	-	-	-	-	-	-	-	-	-	-
Hirat	Enjil	-	-	-	-	-	-	-	-	-	-	-	-
Hirat	Karukh	-	-	-	-	-	-	-	-	-	-	-	-
Hirat	Kohsan	-	-	-	-	-	-	-	-	-	-	-	-
Hirat	Kushk (Rabat-i-Sangi)	-	-	-	-	-	-	-	575	394	284	236	109
Hirat	Kuski-Kohnah	-	-	-	-	-	-	-	11	-	-	-	0
Hirat	Obe	-	-	-	-	-	-	-	-	28	19	52	22
Hirat	Pashtun Zarghun	-	-	-	-	-	-	-	-	65	7	65	31
Hirat	Shindand	360	366	1,080	949	729	280	207	517	98	57	98	120
Hirat	Zendah Jan	-	-	-	-	-	-	-	-	-	-	-	-
Hirat Total		360	366	1,080	952	738	285	208	1,104	595	368	455	290
Jawzjan	Aqchah	-	-	-	-	-	-	-	20	15	72	10	15
Jawzjan	Darab	-	-	-	-	-	-	85	327	73	267	242	200
Jawzjan	Faizabad	-	-	-	-	-	-	7	396	17	72	30	-
Jawzjan	Khamyab	-	-	-	-	-	-	-	-	-	-	-	-
Jawzjan	Khanaqa	-	-	-	-	-	-	-	8	-	7	12	-
Jawzjan	Khawajah DuKoh	-	-	-	-	-	-	-	10	-	16	2	-
Jawzjan	Mardyan	-	-	-	-	-	-	-	399	12	13	4	-
Jawzjan	Mingajik	-	-	-	-	-	-	-	37	-	33	3	6
Jawzjan	Qarqin	-	-	-	-	-	-	-	6	-	4	4	10
Jawzjan	Qush Tepah	-	-	-	-	-	-	316	1,168	121	620	663	320
Jawzjan	Sheberghan (Provincial Center)	-	-	-	-	-	-	1	867	100	228	156	156
Jawzjan Total		p-f	p-f	p-f	p-f	p-f	p-f	409	3,237	338	1,332	1,124	708
Kabul	Bagrami	-	-	-	-	-	-	-	-	-	-	-	-
Kabul	Chahar Asyab	-	-	-	-	-	-	-	-	-	-	-	-
Kabul	Deh Sabz	-	-	-	-	-	-	-	-	-	-	-	-
Kabul	Farzah	-	-	-	-	-	-	-	-	-	-	-	-
Kabul	Gulara	-	-	-	-	-	-	-	-	-	-	-	-
Kabul	Estalef	-	-	-	-	-	-	-	-	-	-	-	-
Kabul	Kabul	-	-	-	-	-	-	-	-	-	-	-	-
Kabul	Kalakan	-	-	-	-	-	-	-	-	-	-	-	-
Kabul	Khaki-Jabar	-	-	-	-	-	-	-	-	-	-	-	-
Kabul	Mir Bacha Kot	-	-	-	-	-	-	-	-	-	-	-	-
Kabul	Musahi	-	-	-	-	-	-	-	-	-	-	-	-
Kabul	Paghman	-	-	-	-	-	-	-	-	-	-	-	-
Kabul	Qara Bagh	-	-	-	-	-	-	-	-	-	-	-	-
Kabul	Shakar Dara	-	-	-	-	-	-	-	-	-	-	-	-
Kabul	Surubi	152	220	120	298	233	321	398	435	484	199	284	216
Kabul Total		152	220	120	298	233	321	398	435	484	199	284	216
Kandahar	Arghandab	22	84	114	18	512	247	381	1,183	832	218	236	29
Kandahar	Argistan	7	42	90	155	1,515	178	58	16	648	16	-	-
Kandahar	Daman	-	-	-	-	1,227	37	43	157	106	1	145	-
Kandahar	Ghorak	1,466	1,165	952	676	269	691	565	573	494	800	1,362	1,177
Kandahar	Kandahar (Provincial Center)	108	262	11	46	-	56	74	113	466	12	5	9
Kandahar	Khakrez	1,215	1,190	794	1,006	867	433	459	416	360	482	871	1,249
Kandahar	Manuf	33	31	28	49	275	8	91	408	84	33	6	5
Kandahar	Maiwand	9,966	10,114	12,690	16,382	16,228	9,112	7,287	9,284	8,389	7,463	10,812	9,162
Kandahar	Miya Neshin	44	45	30	162	632	4	9	410	841	-	22	6
Kandahar	Nesh	2,842	2,096	620	1,057	405	1,065	1,986	2,257	2,397	1,418	2,081	2,293
Kandahar	Panjwayee	2,982	4,914	4,780	984	3,315	1,735	1,565	2,141	1,689	783	1,010	587
Kandahar	Reg	-	-	-	-	-	-	-	-	-	-	-	-
Kandahar	Shah Wali Kot	813	615	242	474	1,471	541	818	1,568	675	124	810	629
Kandahar	Shorabak	-	-	-	102	-	-	-	-	-	-	-	-
Kandahar	Spin Boldak	1,359	1,368	121	207	1,889	2,027	1,857	1,880	1,281	41	30	51
Kandahar	Zhire	4,978	5,288	3,867	7,017	5,108	4,886	5,282	7,605	5,147	2,561	3,166	1,775
Kandahar Total		25,835	27,213	24,341	28,335	33,713	21,020	20,475	28,010	23,410	13,954	20,555	16,971

Province	District	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Kapisa	Ala Sai	-	3	34	33	125	71	103	254	137	-	18	23
Kapisa	Hisah-i-Awal Kohistan	-	-	-	-	-	-	-	-	-	-	-	-
Kapisa	Hisah-i-Duwumi Kohistan	-	-	-	-	-	-	-	-	-	-	31	35
Kapisa	Koh Band	-	9	16	20	46	10	25	29	16	-	12	22
Kapisa	Kohistan	-	-	-	-	-	-	-	-	-	-	-	-
Kapisa	Mahmood-i-Raqi (Provincial Center)	-	-	-	1	-	-	-	-	-	-	-	-
Kapisa	Nirab	-	14	21	20	30	21	26	57	25	-	9	20
Kapisa	Tagab	-	155	219	508	270	358	454	628	207	-	108	116
Kapisa Total		p-f	181	290	582	472	460	608	968	386	p-f	178	216
Khost	Bak	-	-	-	-	-	-	-	-	-	-	-	-
Khost	Gurbuz	-	-	-	-	-	-	-	-	-	-	-	-
Khost	Jaji Maidan	-	-	-	-	-	-	-	-	-	-	-	-
Khost	Khost Matun (Provincial Center)	-	-	-	-	-	-	-	-	-	-	-	-
Khost	Manduzay (Ismyel Khel)	-	-	-	-	-	-	-	-	-	-	-	-
Khost	Musa Khel (Mangal)	-	-	-	-	-	-	-	-	-	-	-	-
Khost	Nadir Shah Kot	-	-	-	-	-	-	-	-	-	-	-	-
Khost	Qalandar	-	-	-	-	-	-	-	-	-	-	-	-
Khost	Sabari (Yaqubi)	-	-	-	-	-	-	-	-	-	-	-	-
Khost	Shamul (Dzadran)	-	-	-	-	-	-	-	-	-	-	-	-
Khost	Spera	-	-	-	-	-	-	-	-	-	-	-	-
Khost	Tanay	-	-	-	-	-	-	-	-	-	-	-	-
Khost	Terayzai (Ali Sher)	-	-	-	-	-	-	-	-	-	-	-	-
Khost Total		p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f
Kunar	Asad Abad (Provincial center)	-	-	61	342	209	1	1	0	2	57	36	-
Kunar	Bar Kunar (Asmar)	7	18	62	83	57	58	73	112	79	62	25	64
Kunar	Chapa Dara	12	42	-	-	-	-	4	5	7	1	1	0
Kunar	Dangam	-	43	30	46	46	28	15	140	134	62	-	26
Kunar	Dara-i-Pech	5	170	298	254	82	30	39	128	97	24	5	-
Kunar	Ghazi Abad	4	13	-	-	-	5	30	31	103	29	4	40
Kunar	Khas Kunar	-	-	57	79	21	116	36	127	305	278	41	8
Kunar	Mara warah	-	2	4	1	-	28	11	1	13	49	12	1
Kunar	Narang wa Badil	1	1	41	22	4	5	31	58	12	1	1	9
Kunar	Nari	-	-	21	18	7	20	25	26	50	11	0	7
Kunar	Noor Gal	20	20	101	-	79	9	241	346	100	2	5	19
Kunar	Sar Kani	-	-	14	25	-	476	359	282	427	305	374	279
Kunar	Shigal wa Sheltan	73	102	459	212	155	71	242	182	212	85	91	77
Kunar	Sawkai	33	30	124	-	50	8	6	14	11	-	-	10
Kunar	Watapoor	-	137	7	46	45	132	163	183	180	0	-	86
Kunar Total		155	578	1,279	1,127	754	987	1,276	1,634	1,732	967	595	626
Kunduz	Ali Abad	-	-	-	-	-	-	-	-	-	-	-	-
Kunduz	Dashti-i-Archi	-	-	-	-	-	-	-	-	-	-	-	-
Kunduz	Chahar Darah	-	-	-	-	-	-	-	-	-	-	-	-
Kunduz	Hazrati Imam Sahib	-	-	-	-	-	-	-	-	-	-	-	-
Kunduz	Khanabad	-	-	-	-	-	-	-	-	-	-	-	-
Kunduz	Kunduz (Provincial Center)	-	-	-	-	-	-	-	-	-	-	-	-
Kunduz	Qala-i-Zal	-	-	-	-	-	-	-	-	-	-	-	-
Kunduz Total		p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f
Laghman	Alingar	48	343	303	503	477	277	546	575	442	141	171	294
Laghman	Alisheng	65	124	335	472	278	285	471	962	881	408	484	566
Laghman	Dowlat Shah	31	52	158	142	5	90	180	301	250	123	15	72
Laghman	Mehterlam (Provincial Center)	90	104	69	119	137	123	175	281	319	189	-	-
Laghman	Qarghayee	-	-	12	-	5	4	8	137	200	47	53	55
Laghman Total		234	624	877	1,236	901	779	1,380	2,257	2,092	908	723	987
Logar	Azra	-	-	-	-	-	-	-	-	-	-	-	-
Logar	Baraki Barak	-	-	-	-	-	-	-	-	-	-	-	-
Logar	Charkh	-	-	-	-	-	-	-	-	-	-	-	-
Logar	Kharwar	-	-	-	-	-	-	-	-	-	-	-	-
Logar	Khoshi	-	-	-	-	-	-	-	-	-	-	-	-
Logar	Muhammad Aghah	-	-	-	-	-	-	-	-	-	-	-	-
Logar	Pul-i-Alam	-	-	-	-	-	-	-	-	-	-	-	-
Logar Total		p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f

Province	District	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Nangarhar	Achin	10	254	580	2,224	3,004	1,090	698	1,364	1,692	0	2	1
Nangarhar	Bati Kot	-	-	-	-	-	4	193	757	952	2	1	0
Nangarhar	Behsud	-	-	-	-	-	-	-	-	-	-	-	2
Nangarhar	Chaparhar	-	12	19	1,452	1,866	1,504	2,472	2,337	402	50	14	20
Nangarhar	Darah-i-Noor	-	-	-	-	162	11	326	700	866	89	99	289
Nangarhar	Deh Bala	-	-	14	-	-	275	55	112	8	6	2	-
Nangarhar	Dur Baba	-	-	-	-	-	-	-	-	-	-	-	-
Nangarhar	Goshta	-	-	-	19	95	6	3	-	44	43	21	3
Nangarhar	Hesarak	5	178	89	-	775	424	581	937	1,002	81	110	116
Nangarhar	Jalalabad	-	-	-	-	-	-	-	-	-	-	-	-
Nangarhar	Kama	-	-	-	-	14	-	-	-	-	-	-	-
Nangarhar	Khugyani	131	557	1,481	5,746	4,755	2,996	4,204	4,728	2,958	396	1,429	725
Nangarhar	Kot	-	-	-	993	2,040	872	80	49	972	33	-	2
Nangarhar	Kuzkunar	-	-	-	-	-	-	1	133	299	-	-	-
Nangarhar	Lalpoor	59	185	-	798	712	218	344	728	171	184	18	-
Nangarhar	Mohmand Dara	1	1	-	155	175	19	213	505	595	45	13	9
Nangarhar	Nazyan	-	-	-	-	-	-	-	-	-	-	-	-
Nangarhar	Pachir wagam	-	3	418	1,672	1,588	1,066	1,160	1,231	1,130	-	17	39
Nangarhar	Rodat	-	-	-	11	946	389	1,426	1,802	2,126	886	248	49
Nangarhar	Sherzad	513	1,510	550	2,650	1,876	884	1,393	1,534	1,499	730	173	742
Nangarhar	Shinwar	-	-	-	-	-	70	379	1,245	1,865	464	17	4
Nangarhar	Surkh Rud	-	-	-	-	219	188	818	816	594	59	61	25
Nangarhar Total		719	2,700	3,151	15,719	18,227	10,016	14,344	18,976	17,177	3,067	2,225	2,027
Nimroz	Asl-i-Chakhansur	183	855	98	9	-	57	34	41	-	-	-	-
Nimroz	Chahar Burjak	144	181	696	511	250	698	1,305	4,167	3,562	91	179	139
Nimroz	Kang	10	31	36	-	-	-	-	2	-	-	-	-
Nimroz	Khash Rod	1,621	1,323	2,536	15,731	14,334	8,046	3,962	7,256	5,552	1,911	2,752	2,166
Nimroz	Zaranj (Provincial Center)	81	102	442	1	-	4	2	0	-	-	-	-
Nimroz Total		2,039	2,493	3,808	16,252	14,584	8,805	5,303	11,466	9,115	2,002	2,931	2,304
Nuristan	Barg-i-Matal	-	-	-	-	-	-	-	-	-	-	-	-
Nuristan	Du Ab	-	-	-	-	-	-	-	-	-	-	-	-
Nuristan	Kamdes	-	-	-	-	-	-	-	-	-	-	-	-
Nuristan	Mandol	-	-	-	-	-	-	-	4	-	-	-	-
Nuristan	Noor Gram	-	-	-	-	-	-	-	117	-	-	-	-
Nuristan	Nuristan Paroon (Provincial Center)	-	-	-	-	-	-	-	-	-	-	-	-
Nuristan	Wama	-	-	-	-	-	-	-	-	-	-	-	-
Nuristan	Waygal	-	-	-	-	-	-	-	-	-	-	-	-
Nuristan Total		p-f	p-f	p-f	p-f	p-f	p-f	p-f	121	p-f	p-f	p-f	p-f
Paktika	Barmal	-	-	-	-	-	-	-	-	-	-	-	-
Paktika	Dilal wa Khwoshmand	-	-	-	-	-	-	-	-	-	-	-	-
Paktika	Gyan	-	-	-	-	-	-	-	-	-	-	-	-
Paktika	Gomal	-	-	-	-	-	-	-	-	-	-	-	-
Paktika	Jani Khel	-	-	-	-	-	-	-	-	-	-	-	-
Paktika	Mata Khan	-	-	-	-	-	-	-	-	-	-	-	-
Paktika	Nika	-	-	-	-	-	-	-	-	-	-	-	-
Paktika	Omna	-	-	-	-	-	-	-	-	-	-	-	-
Paktika	Sar Rowza	-	-	-	-	-	-	-	-	-	-	-	-
Paktika	Sharan (Provincial Center)	-	-	-	-	-	-	-	-	-	-	-	-
Paktika	Sarubi	-	-	-	-	-	-	-	-	-	-	-	-
Paktika	Turwo	-	-	-	-	-	-	-	-	-	-	-	-
Paktika	Urgun	-	-	-	-	-	-	-	-	-	-	-	-
Paktika	Wazakhwah	-	-	-	-	-	-	-	-	-	-	-	-
Paktika	Wor Mamay	-	-	-	-	-	-	-	-	-	-	-	-
Paktika	Yahya Khel	-	-	-	-	-	-	-	-	-	-	-	-
Paktika	Yosuf Khel	-	-	-	-	-	-	-	-	-	-	-	-
Paktika	Zarghun Shahr	-	-	-	-	-	-	-	-	-	-	-	-
Paktika	Ziruk	-	-	-	-	-	-	-	-	-	-	-	-
Paktika Total		p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f
Paktya	Ahmadabad	-	-	-	-	-	-	-	-	-	-	-	-
Paktya	Ali Khail	-	-	-	-	-	-	-	-	-	-	-	-
Paktya	Samkani	-	-	-	-	-	-	-	-	-	-	-	-
Paktya	Dand Patan	-	-	-	-	-	-	-	-	-	-	-	-
Paktya	Gerdez (Provincial Center)	-	-	-	-	-	-	-	-	-	-	-	-
Paktya	Woza Jadran	-	-	-	-	-	-	-	-	-	-	-	-
Paktya	Jaji	-	-	-	-	-	-	-	-	-	-	-	-
Paktya	Jani Khel	-	-	-	-	-	-	-	-	-	-	-	-
Paktya	Laja Ahmad Khel	-	-	-	-	-	-	-	-	-	-	-	-
Paktya	Lija Mangal	-	-	-	-	-	-	-	-	-	-	-	-
Paktya	Sayyid Karam	-	-	-	-	-	-	-	-	-	-	-	-
Paktya	Shamul *	-	-	-	-	-	-	-	-	-	-	-	-
Paktya	Shwak	-	-	-	-	-	-	-	-	-	-	-	-
Paktya	Zurmat	-	-	-	-	-	-	-	-	-	-	-	-
Paktya Total		p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f

Province	District	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Panjshir	Bazarak (Provincial Center)	-	-	-	-	-	-	-	-	-	-	-	-
Panjshir	Darah	-	-	-	-	-	-	-	-	-	-	-	-
Panjshir	Hisa-i-Awal(Khinj)	-	-	-	-	-	-	-	-	-	-	-	-
Panjshir	Hisa-i-Duwumi	-	-	-	-	-	-	-	-	-	-	-	-
Panjshir	Panjshir	-	-	-	-	-	-	-	-	-	-	-	-
Panjshir	Paryan	-	-	-	-	-	-	-	-	-	-	-	-
Panjshir	Rukhah	-	-	-	-	-	-	-	-	-	-	-	-
Panjshir	Shutul	-	-	-	-	-	-	-	-	-	-	-	-
Panjshir	Unaba	-	-	-	-	-	-	-	-	-	-	-	-
Panjsher Total		p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f
Parwan	Bagram	-	-	-	-	-	-	-	-	-	-	-	-
Parwan	Charikar (Provincial Center)	-	-	-	-	-	-	-	-	-	-	-	-
Parwan	Syahgird (Ghorband)	-	-	-	-	-	-	-	-	-	-	-	-
Parwan	Jabalussaraj	-	-	-	-	-	-	-	-	-	-	-	-
Parwan	Koh-i-Safi	-	-	-	-	-	-	-	-	-	-	-	-
Parwan	Salang	-	-	-	-	-	-	-	-	-	-	-	-
Parwan	Sayyid Khel	-	-	-	-	-	-	-	-	-	-	-	-
Parwan	Shaykh Ali	-	-	-	-	-	-	-	-	-	-	-	-
Parwan	Shinwari	-	-	-	-	-	-	-	-	-	-	-	-
Parwan	Surkh-i-Parsa	-	-	-	-	-	-	-	-	-	-	-	-
Parwan Total		p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f
Samangan	Aybak (Provincial Center)	-	-	-	-	-	-	-	-	-	-	-	-
Samangan	Darah-i-Soofo-i-Bala	-	-	-	-	-	-	-	58	198	-	-	3
Samangan	Darah-i-Suf-i-Payin	-	-	-	-	-	-	-	185	40	-	-	138
Samangan	Fayroz Nakhcheer	-	-	-	-	-	-	-	-	-	-	-	-
Samangan	Hazrat-i-Sultan	-	-	-	-	-	-	-	-	-	-	-	-
Samangan	Khuram wa Sar Bagh	-	-	-	-	-	-	-	-	-	-	-	-
Samangan	Roi-Do-Ab	-	-	-	-	-	-	-	-	-	-	-	-
Samangan Total		p-f	p-f	p-f	p-f	p-f	p-f	p-f	243	238	p-f	p-f	141
Sari Pul	Balkhab	-	-	-	-	-	-	-	-	-	-	-	-
Sari Pul	Gosfandi	-	-	-	-	-	-	-	-	4	-	-	-
Sari Pul	Kohistanat	-	-	-	-	-	-	-	-	96	7	10	22
Sari Pul	Sangcharak	-	-	-	-	-	-	-	-	181	223	-	-
Sari Pul	Sari Pul (Provincial Center)	-	-	-	-	-	-	72	212	80	280	572	522
Sari Pul	Sayyad	-	-	-	-	195	331	1,614	3,338	239	1,623	2,004	1,413
Sari Pul	Sozmu Qala	-	-	-	-	-	-	-	-	61	-	21	18
Sari Pul Total		p-f	p-f	p-f	p-f	195	331	1,686	3,550	660	2,134	2,607	1,975
Takhar	Baharak	-	-	-	-	-	-	-	-	-	-	-	-
Takhar	Bangi	-	-	-	-	-	-	-	-	-	-	-	-
Takhar	Chahab	-	-	-	-	-	-	-	-	-	-	-	-
Takhar	Chal	-	-	-	-	-	-	-	-	-	-	-	-
Takhar	Darqad	-	-	-	-	-	-	-	-	-	-	-	-
Takhar	DashtiQala	-	-	-	-	-	-	-	-	-	-	-	-
Takhar	Farkhar	-	-	-	22	-	-	-	7	18	-	-	-
Takhar	Hazar Sumuch	-	-	-	-	-	-	-	-	-	-	-	-
Takhar	Eshkamish	-	-	-	-	-	-	-	-	-	-	-	-
Takhar	Kalafgan	-	-	-	21	-	-	-	17	40	-	-	-
Takhar	Khwaja Bahawuddin	-	-	-	-	-	-	-	-	-	-	-	-
Takhar	Khwaja Ghar	-	-	-	-	-	-	-	-	-	-	-	-
Takhar	Namak Ab	-	-	-	-	-	-	-	-	-	-	-	-
Takhar	Rustaq	-	-	-	25	-	-	-	23	193	-	-	-
Takhar	Taloqan (Provincial Center)	-	-	-	2	-	-	-	-	1	-	-	-
Takhar	Warsaj	-	-	-	-	-	-	-	-	-	-	-	-
Takhar	Yangi Qala	-	-	-	-	-	-	-	-	-	-	-	-
Takhar Total		p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	251	p-f	p-f	p-f

Province	District	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Uruzgan	Chorah	221	301	349	611	502	275	454	1,263	1,128	312	255	369
Uruzgan	Dihrawud	145	3,438	4,375	3,321	2,214	3,382	4,743	5,648	5,479	3,258	3,063	3,435
Uruzgan	Khas Uruzgan	230	384	38	123	1,074	172	2,492	2,680	1,059	762	1,380	342
Uruzgan	Nesh *	-	-	-	-	-	-	-	-	-	-	-	-
Uruzgan	Shahidi Hasas	3,635	3,601	3,617	3,888	2,296	3,489	1,951	3,062	2,707	2,064	2,575	2027
Uruzgan	Tirin Kot (Provincial Center)	3,106	2,895	2,129	1,936	3,042	3,852	5,574	8,368	7,873	5,050	6,065	3501
Uruzgan	Gizab*	-	-	-	-	148	107	290	520	417	132	105	71
Uruzgan Total		7,337	10,620	10,508	9,880	9,277	11,277	15,503	21,541	18,662	11,578	13,444	9,745
Wardak	Chak-i-Wardak	-	-	-	-	-	-	-	-	-	-	-	-
Wardak	Daimirdad	-	-	-	-	-	-	-	-	-	-	-	-
Wardak	Hisab-i-Awal Behsud	-	-	-	-	-	-	-	-	-	-	-	-
Wardak	Jaghatai	-	-	-	-	-	-	-	-	-	-	-	-
Wardak	Jalrez	-	-	-	-	-	-	-	-	-	-	-	-
Wardak	Markaz-i-Behsud	-	-	-	-	-	-	-	-	-	-	-	-
Wardak	Maidan Shahr (Provincial Center)	-	-	-	-	-	-	-	-	-	-	-	-
Wardak	Nerki	-	-	-	-	-	-	-	-	-	-	-	-
Wardak	Sayyidabad	-	-	-	-	-	-	-	-	-	-	-	-
Wardak Total		p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f	p-f
Zabul	Arghandab	91	47	79	32	256	24	56	56	-	-	-	-
Zabul	Atghar	16	1	5	12	12	-	3	52	9	-	1	-
Zabul	Daychopan	122	26	25	259	178	25	35	93	294	-	16	6
Zabul	Kakar Kak-e-Afghan	44	40	38	50	403	122	4	-	24	-	2	3
Zabul	Mizan	140	74	155	858	544	171	150	759	806	146	155	98
Zabul	Naw Bahar	4	2	12	-	-	-	-	-	-	-	-	-
Zabul	Qalat (Provincial Center)	20	56	10	28	146	37	-	10	18	-	-	74
Zabul	Shah Joi	20	11	69	96	146	-	-	-	-	-	78	-
Zabul	Shemel Zayi	15	1	5	-	41	-	-	202	32	-	0	2
Zabul	Shinkai	-	-	-	-	-	-	-	-	39	37	156	-
Zabul	Tarnak wa Jaldak	10	5	26	-	1,168	265	1,115	959	1359	-	-	796
Zabul Total		482	262	424	1,335	2,894	644	1,363	2,131	2,581	183	408	980
TOTAL		122,515	131,065	154,436	209,450	224,337	182,566	182,566	182,566	262,588	163,471	223,695	176,529
Rounded Total		123,000	131,000	154,000	209,000	224,000	183,000	183,000	183,000	263,000	163,000	224,000	177,000

p-f: Poppy-free according to the definition of the respective year. This concept was introduced in 2007. In 2007, provinces with no poppy were considered poppy-free; since 2008, provinces with less than 100 hectares of poppy have been considered poppy-free.

The survey is designed to produce province level estimates. District estimates are derived by a combination of different approaches. They are indicative and suggest a possible distribution of the estimated provincial poppy area among the districts of a province.