



Afghanistan

Opium Survey 2007



data collection

data transfer

data transfer

October 2007

ABBREVIATIONS

AEF	Afghan Eradication Force
ANP	Afghan National Police
GPS	Global Positioning System
ICMP	Illicit Crop Monitoring Programme (UNODC)
MCN	Ministry of Counter-Narcotics
RAS	Research and Analysis Section (UNODC)
UNODC	United Nations Office on Drugs and Crime

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This report, and other ICMP survey reports can be downloaded from:
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PREFACE

The world's leading drug producer

In 2007 Afghanistan cultivated 193,000 hectares of opium poppies, an increase of 17% over last year. The amount of Afghan land used for opium is now larger than the corresponding total for coca cultivation in Latin America (Colombia, Peru and Bolivia combined).

Favourable weather conditions produced opium yields (42.5 kg per hectare) higher than last year (37 kg/ha). As a result, in 2007 Afghanistan produced an extraordinary 8,200 tons of opium (34% more than in 2006), becoming practically the exclusive supplier of the world's deadliest drug (93% of the global opiates market). Leaving aside 19th century China, that had a population at that time 15 times larger than today's Afghanistan, no other country in the world has ever produced narcotics on such a deadly scale.

In Afghanistan, the total export value of opium and heroin being trafficked to neighbouring countries in 2007 is \$US 4 billion, an increase of 29% over 2006. That means that opium now accounts for more than half (53%) of the country's licit GDP.

This export adds value with every border that it crosses. By the time the heroin hits the streets of Moscow, Paris or London, it could be worth 50 to 100 times as much as in Kabul (taking changes in purity into account). Therefore, while opium is profitable to some Afghan farmers, these sums – though significant in relation to the local economy – are only a fraction of the major profits that are being made world-wide by criminals, insurgents and terrorists.

A divided country

On aggregate, Afghanistan's opium production has thus reached a frighteningly new level, twice the amount produced just two years ago. Behind this headline we note however an important development -- a fault-line now divides the country, with opium cultivation trends moving in opposite directions.

In centre-north Afghanistan, despite massive poverty, opium cultivation has diminished. The number of opium-free provinces more than doubled, from 6 last year to 13 in 2007. A leading example is the province of Balkh, where opium cultivation collapsed from 7,200 hectares last year to zero today. Other Afghan provinces should be encouraged to follow the model of this northern region where leadership, incentives and security have led farmers to turn their backs on opium.

In south-west Afghanistan, despite relatively higher levels of income, opium cultivation has exploded to unprecedented levels. This year around 70% of the country's poppies were grown in five provinces along the border with Pakistan. An astonishing 50% of the whole Afghan opium crop comes from one single province: Hilmand. With just 2.5 million inhabitants, this relatively rich southern province has become the world's biggest source of illicit drugs, surpassing the output of entire countries like Colombia (coca), Morocco (cannabis), and Myanmar (opium) – which have populations up to twenty times larger.

Insurgency, greed and corruption

This North-South divide highlights three new circumstances. First, opium cultivation in Afghanistan is no longer associated with poverty – quite the opposite. Hilmand, Kandahar and three other opium-producing provinces in the south are the richest and most fertile, in the past the breadbasket of the nation and a main source of earnings. They have now opted for illicit opium on an unprecedented scale (5,744 tons), while the much poorer northern region is abandoning the poppy crops.

Second, opium cultivation in Afghanistan is now closely linked to insurgency. The Taliban today control vast swathes of land in Hilmand, Kandahar and along the Pakistani border. By preventing national authorities and international agencies from working, insurgents have allowed greed and corruption to turn orchards, wheat and vegetable fields into poppy fields.

Third, the Taliban are again using opium to suit their interests. Between 1996 and 2000, in Taliban-controlled areas 15,000 tons of opium were produced and exported – the regime’s sole source of foreign exchange at that time. In July 2000, the Taliban leader, Mullah Omar, argued that opium was against Islam and banned its cultivation (but not its export). In recent months, the Taliban have reversed their position once again and started to extract from the drug economy resources for arms, logistics and militia pay.

Rescuing Afghanistan from drugs and terror

It would be an historic error to let Afghanistan collapse under the blows of drugs and insurgency. This double threat is real and growing, despite a foreign military presence in the tens of thousands, billions of dollars spent on reconstruction, and the huge political capital invested in stabilizing a country that has been in turmoil for a third of a century.

The opium problem cannot be contained solely by counter-narcotic measures, nor can counter-insurgency disregard the threat posed by drug-related funding to terrorists. The twin threats must be met by building upon the promising developments in the north-east, and by reacting to the dismal failures in the south-west. I therefore urge the Afghan Government and the international community to look into several new concrete initiatives in line with the Afghan National Drug Strategy.

Higher rewards to non-opium farmers. Although several sources of economic assistance to farmers are in place (i.e. the Counter-narcotics Trust Fund and the Good Performance Fund), expenditure is abysmally low because of ministerial competition, corruption and bureaucratic inertia -- nationally and internationally. Future aid must be focussed on a hand-full of priority programs (hospitals, schools, water and power) and disbursed quickly in amounts proportional to the progress made towards achieving an opium-free status. A no-opium pledge embedded in all assistance would facilitate meeting this goal.

Higher risks for opium farmers. Colombia, Morocco, Peru, Thailand and Laos have demonstrated that illicit crop eradication can be an important corrective and preventive measure. In 2007 opium crop eradication in Afghanistan (about 20,000 hectares, namely 10% of the cultivation) was higher than earlier, but still inadequate to reduce this year’s harvest and to deter next year’s planting. The Afghan government’s opium eradication program should be undertaken more honestly and more vigorously. Mainly marginal fields were destroyed in 2007, often as the result of corrupt deals between field owners, village elders and eradication teams: as a result poor farmers suffered the brunt of eradication. In 2008, rich landlords, especially in the south of the country, should face the consequences of breaking the law.

More opium-free provinces. Historically, from the Andean range to the greater Mekong delta, governments have regained control of areas under drug cultivation by curtailing crops progressively, province by province, through a balance of rewards and risks. To an extent, this did happen in Afghanistan in 2007, during which 2/5 of the 34 provinces became opium free (more than twice last year’s number). It is now realistic to set a target of at least half of the country’s provinces becoming opium-free in 2008. Two additional qualitative goals should be set. First, provinces need to abandon not just opium cultivation but also its trade: even in the north of the country where opium crops have disappeared, drug trading and refining continue to flourish. Second, it is especially important to achieve zero opium cultivation in the provinces of Nangarhar and Badakhshan, in order to confine totally the opium problem to the southern insurgency-infested regions. Nangarhar is a case of back-sliding: in 2005 cultivation decreased by 95%, but in 2007 went right back to almost 19,000 ha. In Badakhshan, on the other hand, cultivation this year declined by 72%, making the opium-free goal realistic in the months to come.

NATO to help taking on opium labs, markets and traffickers. The opium economy of Afghanistan can be bankrupted by blocking the two-way flow of (i) imported chemicals, and (ii) exported drugs. In both instances several thousand tons of materials are being moved across the southern border and nobody seems to take notice. Since drug trafficking and insurgency live off of each other, the foreign military forces operating in Afghanistan have a vested interest in supporting counter-narcotics operations: destroying heroin labs, closing opium markets, seizing opium convoys and bringing traffickers to justice. This will generate a double benefit. First, the destruction of the drug trade will win popular support (only 1 out of 10 Afghan farming families cultivate opium, earning a disproportionately large share of the national income). Second, lower opium demand by traders will reduce its price and make alternative economic activity more attractive.

Coherence in policy. Drug metastases have spread throughout Afghanistan, providing capital for investments, foreign exchange for expensive imports, revenue to underpaid officials as well as funding for weddings, burials and pilgrimages. Corruption has facilitated the general profiteering. The government's benign tolerance of corruption is undermining the future: no country has ever built prosperity on crime. Similarly, in the provinces bordering with Pakistan, tacit acceptance of opium trafficking by foreign military forces as a way to extract intelligence information and occasional military support in operations against the Taliban and Al-Qaida undermines stabilization efforts.

International actions against drug traffickers. The Afghan judicial system is weak and vulnerable to corruption. Around the country more resources are needed to enhance integrity and increase the likelihood of retribution against crime. The new maximum-security prison at Poli-y-Charkee (near Kabul) still awaits major drug dealers - rather than drivers and couriers. Also, the international arm of the law can now become longer and stronger. Resolution 1735 (2006) of the UN Security Council gives countries the possibility to include in the Taliban/Al-Qaida list the names of major drug traffickers connected to terrorism. In the course of 2007, the world community should add a dozen of such traffickers' names to the Security Council list, in order to ban their travel, seize their assets and facilitate their extradition.

Cross border cooperation. The opium boom in Afghanistan and the instability at its borders is creating a sense of urgency and a convergence of interests among neighbouring countries. Some encouraging signs are there. The commitment by the governments of Afghanistan, Pakistan and Iran to work towards the joint realization of physical barriers to block smuggling, increase law enforcement, run joint operations and share intelligence -- measures devised as part of the Triangular Initiative promoted by UNODC -- deserve international support, as a way of tackling a threat that defies national borders.

Lower foreign demand for Afghan opium. As UNODC has often pointed out, a major responsibility rests with the governments of opiates consuming countries in the European Union, the CIS nations and China. This concern remains urgent. Once again, the yearly Afghan opium harvest may kill, directly and not, over 100 thousand people. However, since the opium supply from Afghanistan currently exceeds global demand by an enormous margin (over 3,000 tons), the highest priority is to deal with the problem at the source -- namely in Afghanistan. Health questions aside, opium stockpiles, a notorious store of value, could once again be used to fund international terrorism.

* * *

The Afghan opium situation looks grim, but it is not yet hopeless. The problem is increasingly localized in southern provinces along the Pakistan borders, where populations face threats reminiscent of what happened there a decade ago. Good results in the north-east demonstrate that progress is possible. It will take time, money and determination -- worthwhile investments to spare Afghanistan and the rest of the world more tragedies.



Antonio Maria Costa

Executive Director

United Nations *Office on Drugs and Crime*

FACT SHEET ANNUAL OPIUM POPPY SURVEY 2007

	2006	Difference on 2006	2007
Net opium poppy cultivation (after eradication)	165,000 ha	+17%	193,000 ha
in per cent of agricultural land	3.65%		4.27%
in per cent of global cultivation	82%		82%
Number of provinces affected by poppy cultivation	28		21
Number of poppy free provinces	6		13
Eradication	15,300 ha	+24%	19,047 ha
Weighted average opium yield	37.0 kg/ha	+15%	42.5 kg/ha
Potential production of opium	6,100 mt	+34%	8,200 mt
in per cent of global production	92%		93%
Number of households involved in opium cultivation	448,000	+14%	509,000
Number of persons involved in opium cultivation	2.9 million	+14%	3.3 million
in per cent of total population (23 million) ¹	12.6%		14.3%
Average farm-gate price (weighted by production) of fresh opium at harvest time	US\$ 94/kg	-9%	US\$ 86/kg
Average farm-gate price (weighted by production) of dry opium at harvest time	US\$ 125/kg		US\$ 122/kg
Current Afghanistan GDP ²	US\$ 6.9 billion	+12%	US\$ 7.5 billion
Total farm-gate value of opium production	US\$ 0.76 billion	+32%	US\$ 1 billion
in per cent of GDP ³	11%		13%
Total export value of opiates to neighbouring countries	US\$ 3.1 billion	+29%	US\$ 4.0 billion
in per cent of GDP ⁴	45%		53%
Household average yearly gross income from opium of opium poppy growing families	US\$ 1,700	+16%	US\$ 1,965
Per capita gross income from poppy growing for opium poppy growing farmers	US\$ 260	+17%	US\$ 303
Current Afghanistan GDP per capita ⁵	US\$ 290	+7%	US\$ 310
Indicative gross income from opium per ha	US\$ 4,600	+13%	US\$ 5,200
Indicative gross income from wheat per ha	US\$ 530	+3%	US\$ 546

¹ Population based on estimates by the Afghan Central Statistical Office (22.2 million in 2003). Populations estimates vary, however; e.g. UN population division estimate: 25.1 million for 2005 or 27 million for 2007. (Last census dates back to 1979).

² Data for Afghan year 1384 (March 2005 - March 2006) and preliminary estimates for Afghan year 1385 (March 2006 - March 2007) (*Afghan Government, Central Statistical Office*). Estimates differ, however, from GDP projections provided by the International Monetary Fund and the World Bank. 2006: US\$8.4 bn (IMF and World Bank); 2007: US\$ 9.9 bn. (IMF, *World Economic Outlook Database*, April 2007).

³ Based on Afghan Govt. GDP estimates. Based on IMF GDP projections: farm-gate value: 9% of GDP in 2006; 10% in 2007.

⁴ Based on Afghan Govt. GDP estimates. Based on IMF GDP projections: opiate sector: 37% of GDP in 2006; 40% in 2007.

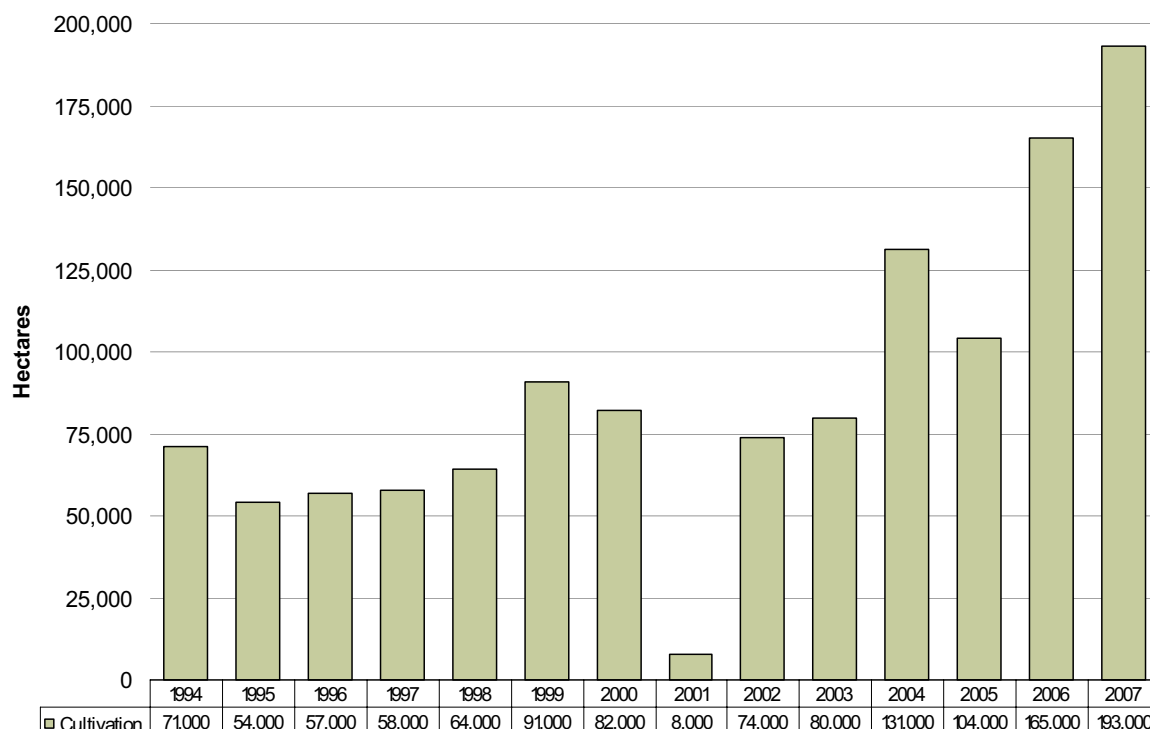
⁵ Afghan Govt. estimates; IMF projections: current GDP per capita: \$335 in 2006 and \$383 in 2007.

EXECUTIVE SUMMARY

Opium poppy cultivation reaches a new record level in 2007

The area under opium poppy cultivation in Afghanistan increased by 17% in 2007, from 165,000 hectares in 2006 to 193,000 hectares. As a result of the upsurge in opium poppy cultivation in Afghanistan, global opium poppy cultivation rose by 17% in 2007 to over 234,000 hectares⁶. Afghanistan's share of global cultivation remains 82%.

Figure 1: Opium poppy cultivation in Afghanistan (ha), 1994-2007

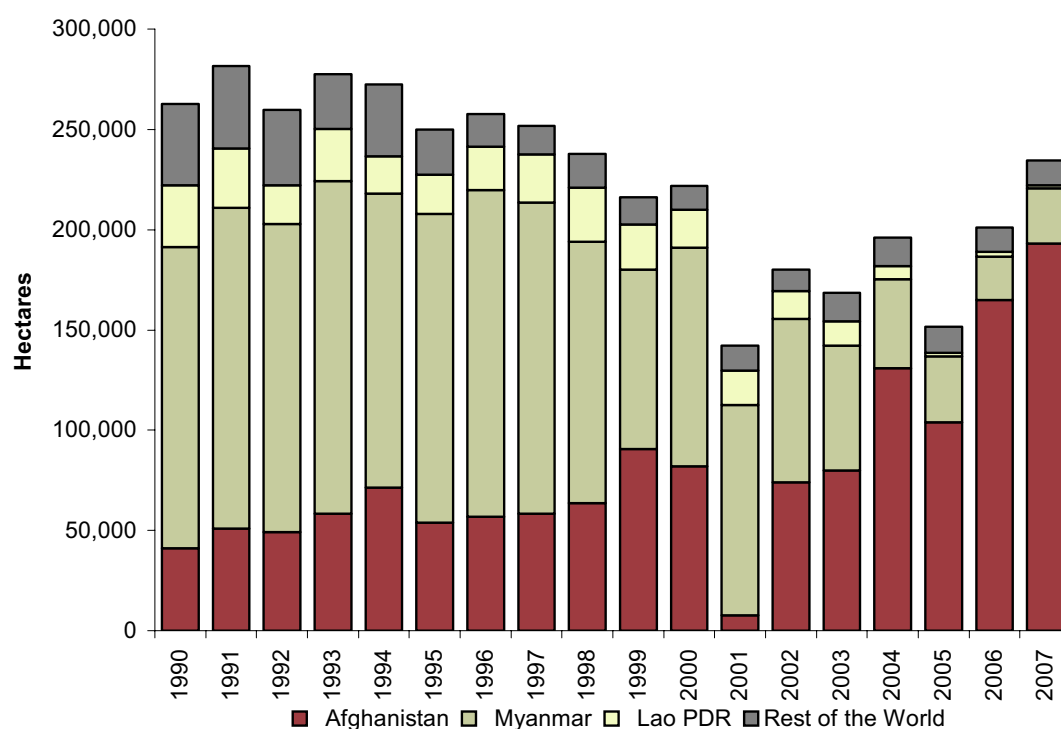


The 2007 increase is in line with the findings of the Opium Winter Rapid Assessment Survey implemented in January/February 2007 (UNODC, *Afghanistan Opium Winter Rapid Assessment Report*, February 2007).

The dynamics of opium poppy cultivation in 2007 revealed stronger than ever regional disparities. Sharp increases occurred in the South, West and East, and significant decreases took place in the North and North-East of the country. This corresponds to the security situation's increased polarization between the lawless south and relatively stable north of the country.

⁶ Based on preliminary opium cultivation estimates for the rest of the world.

Figure 2: Global opium poppy cultivation (ha), 1990-2007



Opium poppy cultivation in South and South-West Afghanistan rises sharply

The number of security incidents increased sharply in 2006 and 2007, especially in the South and South-West of Afghanistan. Over the same period, opium poppy cultivation increased sharply in these regions. Some 80% of the opium poppy cultivation in Afghanistan in 2007 was located in Hilmand, Kandahar, Uruzgan, Day Kundi, Zabul, Farah and Nimroz (154,981 ha) where security conditions have deteriorated markedly. Most of these areas were inaccessible to the United Nations and non-governmental organizations (NGOs).

Table 1: Regional distribution of opium poppy cultivation, 2006-2007

Region	2006 (ha)	2007 (ha)	Change 2006-2007	2006 as % of total	2007 as % of total
Southern	101,900	133,546	31%	62%	69%
Northern	19,267	4,882	-75%	12%	3%
Western	19,820	28,619	44%	12%	15%
North-eastern	15,336	4,853	-68%	9%	3%
Eastern	8,312	20,581	148%	5%	11%
Central	337	500	48%	0.2%	0.3%
Rounded Total	165,000	193,000	+17%	100%	100%

Opium poppy cultivation in Hilmand province increased by almost 50% and reached 102,770 ha, compared to 69,324 ha in 2006. Fifty-three per cent of total opium poppy cultivation of Afghanistan was located in Hilmand. Cultivation in Hilmand province more than tripled between 2002 and 2007, bringing the area under opium poppy cultivation in 2007 nearly equal to total cultivation in Afghanistan in 2005 (104,000 ha).

In Kandahar province, opium poppy cultivation increased by one third to 16,615 ha in 2007 compared to 2006, despite the eradication of 7,905 ha of opium poppy. The sharp increase in opium poppy cultivation had started already in 2004 when only 4,959 ha were cultivated. Since then, the area under opium poppy has more than tripled.

Opium poppy cultivation in Nimroz province tripled compared to 2006 and reached 6,507 ha in 2007. The majority of the cultivation was located in Khash Rod district. Many new agricultural areas were identified in the northern part of this district in 2006 and 2007, a vast majority of which were used for opium poppy cultivation. Only 43 ha of opium poppy were eradicated in 2007 in Nimroz. In 2004, total opium poppy cultivation in this province was only 115 ha.

The total area under opium poppy in Farah province almost doubled to 14,865 ha in 2007. Eradication was very limited (179 ha). As in Kandahar, cultivation started to increase after 2004. In 2002, the total cultivation in this province amounted to only 500 ha.

Table 2: Main opium poppy cultivation provinces in Afghanistan (ha), 2007

Province	2003	2004	2005	2006	2007	Change 2006-2007	% Total in 2007	Cumulative %
Hilmand	15,371	29,353	26,500	69,324	102,770	+48%	53%	53%
Nangarhar	18,904	28,213	1,093	4,872	18,739	+285%	10%	63%
Kandahar	3,055	4,959	12,989	12,619	16,615	+32%	9%	72%
Farah	1,700	2,288	10,240	7,694	14,865	+93%	8%	79%
Uruzgan	4,698	N/A	2,024	9,773	9,204	-6%	5%	84%
Nimroz	26	115	1,690	1,955	6,507	+233%	3%	87%
Rest of the country	36,246	66,072	49,464	58,763	24,281	-59%	13%	100%
Rounded Total	80,000	131,000	104,000	165,000	193,000	17%		

Nangarhar slips back to high level of opium poppy cultivation

In 2007, opium poppy cultivation in Nangarhar increased by 285% to 18,739 ha. In 2005, the province had become almost opium poppy free as a result of self restriction on the part of farmers, which led to a 96% decrease on 2004. In 2006, opium poppy cultivation began to increase but could only in very remote parts of the province. By 2007, opium poppy cultivation was observed even in close proximity to the provincial capital. Significantly, two important tribes in Nangarhar did not follow the Government's opium ban, and this led to a sharp increase in cultivation in the southern part of the province. Opium poppy cultivation in the northern part of the province is still very limited.

In Laghman province, opium poppy cultivation decreased by 21% and reached only 561 ha in 2007. In Kunar province, opium poppy cultivation declined to 446 ha in 2007, a 52% reduction compared to 2006. In both provinces, opium poppy cultivation was restricted to remote areas with difficult access.

Number of opium poppy free provinces increases to 13 in 2007

The number of opium poppy free provinces increased to 13 in 2007 compared to 6 in 2006⁷. These poppy free⁸ provinces are: Balkh, Bamyan, Ghazni, Khost, Kunduz, Logar, Nuristan, Paktika, Paktya, Panjshir, Parwan, Samangan and Wardak.

Unless serious action is taken in terms of external assistance to Balkh and other opium poppy free provinces, there is a high risk that they will resume opium poppy cultivation in the coming growing season.

⁷ *Opium poppy free provinces in 2006: Ghazni, Logar, Paktika, Paktya, Panjsher, and Wardak.*

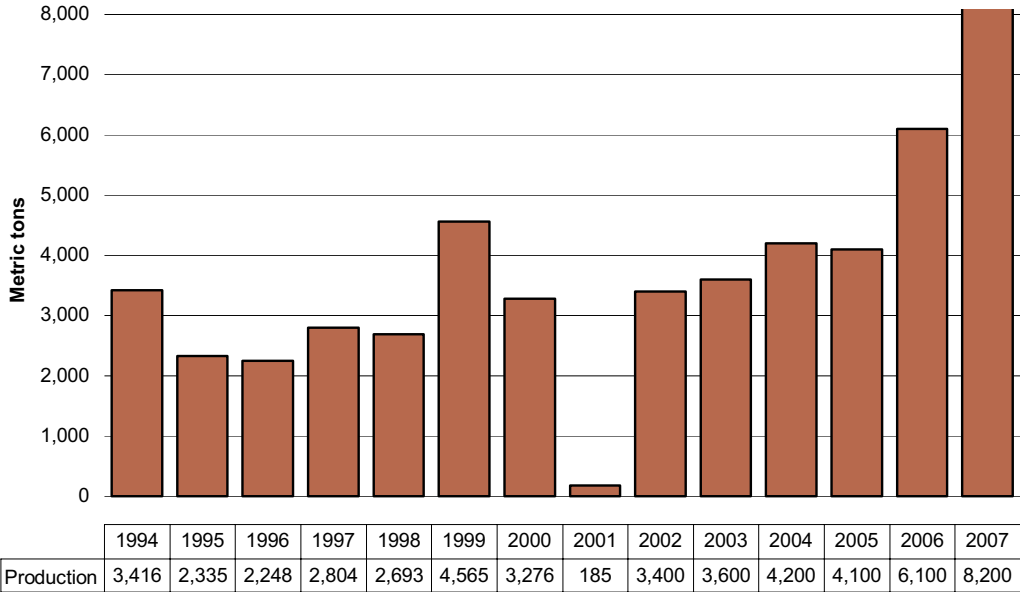
⁸ *Definition of opium poppy free status in 2007: province with less than 100 ha of opium poppy.*

Potential opium production in Afghanistan peaks at 8,200 metric tons in 2007

Weather conditions in 2007 were ideal for opium poppy, contributing to the highest opium yield of the last 5 years. Also, favorable weather conditions contributed to a lack of plant disease on opium poppy or on other crops. The average yield was 42.5 kg/ha at the country level compared to 37.0 kg/ha in 2006.

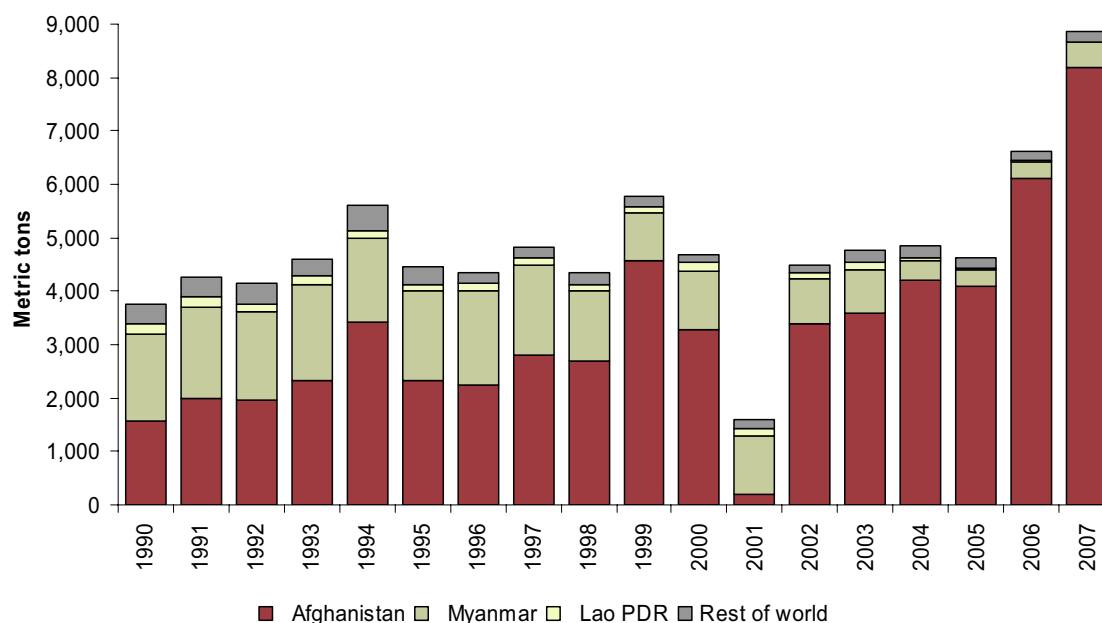
Record levels of cultivation and the high yield led to a 34% increase in potential opium production in Afghanistan for 2007 (8,200 metric tons). If all opium were converted into heroin, it would amount to 1,170 metric tons of the drug. Taking domestic consumption of opium, seizures and opium exports into account, Afghanistan’s morphine and heroin production is estimated at 666 metric tons in 2007, up from 555 metric tons in 2006.

Figure 3: Potential opium production in Afghanistan (metric tons), 1994-2007



In 2007, opium production in Afghanistan was 24% higher than global opium production in 2006 (6,610 metric tons). The global opium production in 2007 reached its highest point since 1990: more than 8,800 metric tons⁹. The proportion of Afghanistan in global opium production increased from 92% to about 93% in 2007.

⁹ Based on preliminary opium production estimates for the rest of the world.

Figure 4: Global potential opium production (metric tons), 1990-2007

In 2007, almost 81% of the national opium production was located in the South and South-West of Afghanistan. Opium production in Hilmand alone (4,399 metric tons) was higher than Afghanistan's total production in 2005 (4,100 mt).

Table 3: Average opium yield per region in Afghanistan, 2006-2007

Region	2006 Average yield (kg/ha)	2007 Average yield (kg/ha)	Change
Central Region (Parwan, Paktya, Wardak, Khost, Kabul, Logar, Ghazni, Paktika, Panjshir)	23.3	51.9	+123%
Eastern Region (Nangarhar, Kunar, Laghman, Nuristan, Kapisa)	36.6	45.2	+23%
North-Eastern Region (Badakhshan, Takhar, Kunduz)	38.7	40.7	+5%
Northern Region (Bamyan, Jawzjan, Sari Pul, Baghlan, Faryab, Balkh, Samangan)	41.8	49.7	+19%
Southern Region (Hilmand, Uruzgan, Kandahar, Zabul, Day Kundi)	36.3	42.2	+16%
Western Region (Ghor, Hirat, Farah, Nimroz, Badghis)	32.3	28.8	-11%
Weighted national average	37.0	42.5	15%

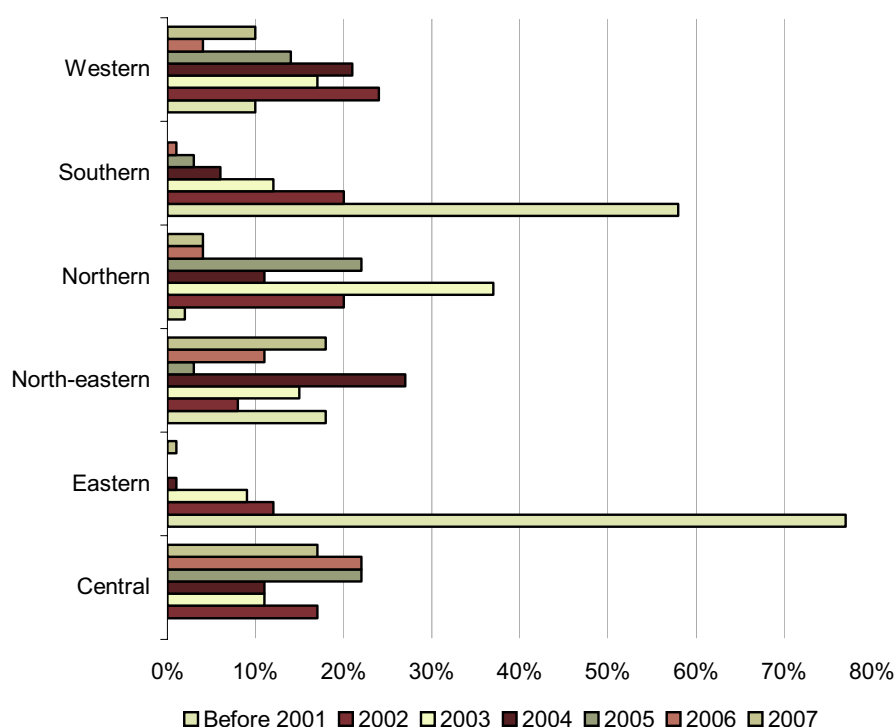
Potential opium production in the Southern Region of Afghanistan increased by 55% to 5,745 metric tons, equivalent to 70% of the total production in the country in 2007. Although yields were higher than in 2006, opium production decreased by 73% in the Northern Region to 233 mt, which was equivalent to 2.8% of the total production. In the Western Region, opium poppy cultivation increased by 44%, resulting in a 57% increase in opium production. Significant increases in cultivation in the Eastern Region (particularly in Nangarhar province) resulted in an opium production increase of 257% over 2006.

14.3% of the total population is involved in opium poppy cultivation

In 2007, the survey estimated that 509,000 families were involved in opium poppy cultivation compared to 448,000 families in 2006 (a 14% increase). Given an average of 6-7 members per family, this represents an estimated total of about 3.3 million persons, or 14.3 % of Afghanistan’s 23 million population.

The 14% increase in opium cultivating households in 2007 does not correspond directly to ‘new’ opium poppy growing farmers. About 46% of the opium poppy growing farmers in Afghanistan started to cultivate poppy before the year 2001, and about 54% after the year 2001. Only a small proportion of farmers started opium poppy cultivation in 2006 (3%) and in 2007 (4%). In the Southern and Eastern Regions, where opium poppy cultivation increased by 31% and 44% respectively, very few farmers had cultivated for the first time. Both in the Southern and Eastern Region, around 43% of the farmers who grew opium poppy in 2007 started opium poppy cultivation before 2001. These farmers did not necessarily cultivate every year.

Figure 5: First year of opium poppy cultivation, by region (n=724)



Opium prices fall in 2007

In 2007, the weighted average farm-gate price of fresh opium at harvest time was US\$ 86/kg which is 9% lower than in 2006. Farm-gate prices of dry opium amounted to US\$ 122/kg (weighted by production) at harvest time in 2007. Although opium prices were lower than in the period 2001-2003, they were still three times higher than during 1994-2000.

Figure 6: Average farm-gate price of dry opium (US\$/kg), September 2004 to August 2007

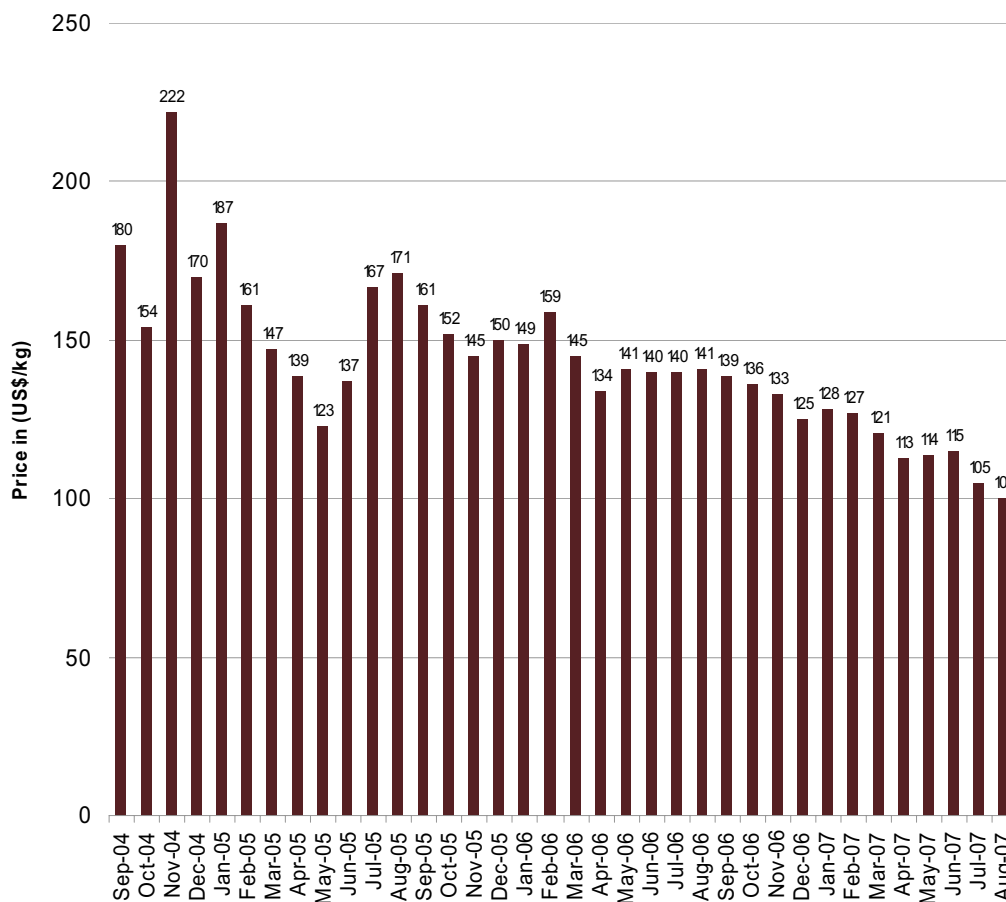
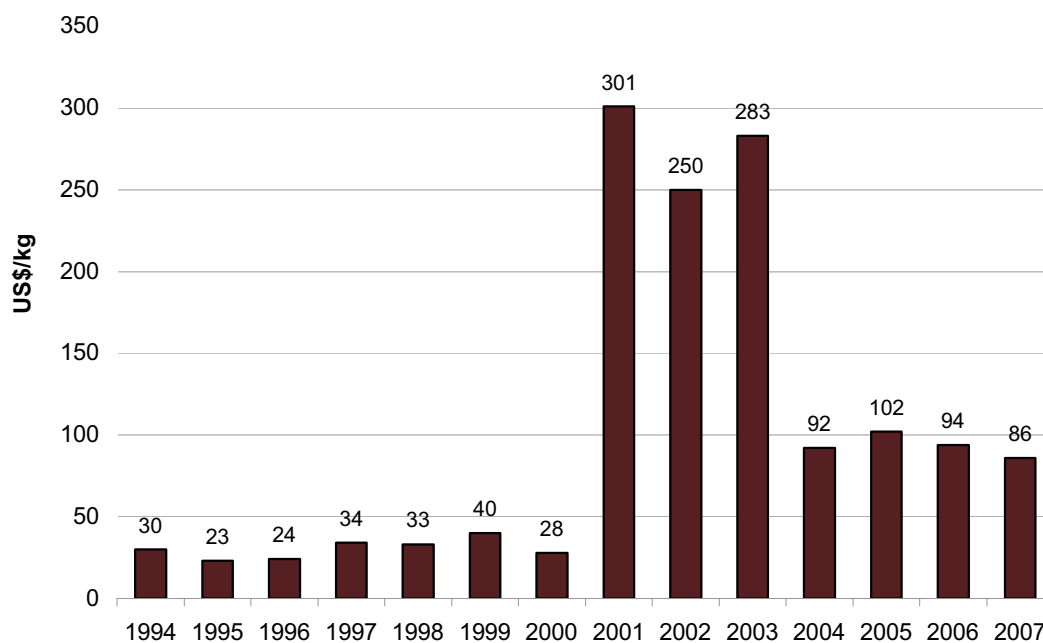


Figure 7: Fresh opium farm-gate prices at harvest time (weighted by production) in Afghanistan (US\$/kg), 1994-2007



Opium prices decreased throughout Afghanistan due to increases in production. Prices decreased by 12% in the Eastern Region, 9% in the Northern Region and 17% in the Western Region. Opium prices did not fall much (6% decrease) in the Southern Region despite record levels of production. The highest dry opium prices were reported in the Eastern (US\$ 168/kg) and Central Regions (US\$ 167/kg). In 2005, opium prices in the Eastern Region rose due to a dramatic decline of opium production. In 2007, substantial opium production in Nangarhar province suppressed prices in 2006.

In general, prices in the Northern Region are lower than in other regions, reportedly because of the low morphine content of the opium produced in that region. The high transportation cost involved in moving a large part of the opium production from North to South Afghanistan for heroin production and onwards trafficking to other countries also has a dampening effect on prices.

Since 1997, UNODC has been collecting opium prices regularly from various provinces and circulating monthly opium price reports to important stakeholders. These reports showed that opium prices have been decreasing throughout Afghanistan since January 2007. The farm-gate price for dry opium in July 2007 was US\$ 105/kg (unweighted average) compared to US\$ 140/kg a year earlier, which corresponded to a 25% decrease. Prices were considerably higher in Nangarhar and Nimroz provinces.

Although opium production increased considerably in 2006 and again in 2007, opium prices did not fall as much as one would have expected. A possible explanation could be that after the sharp decrease in opium poppy cultivation in Myanmar and Laos in recent years, opium from Afghanistan appears to be increasingly trafficked to China, India and South-East Asia, which were traditionally supplied mainly with opium from the Golden Triangle.

Total farm-gate value of opium increased 32% to US\$ 1 billion

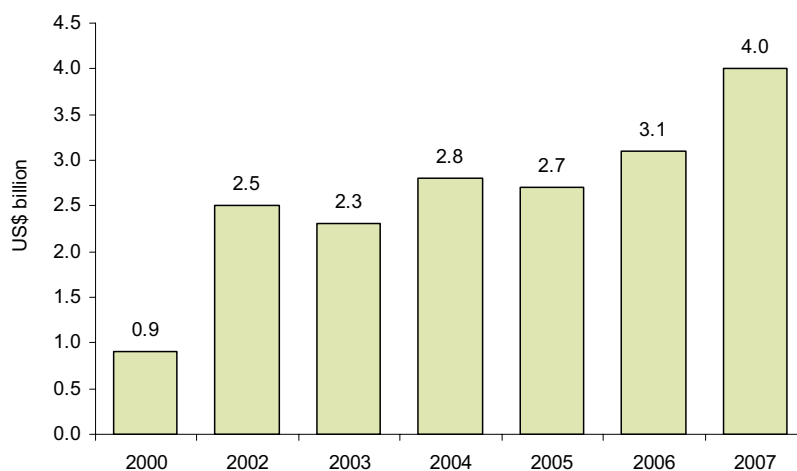
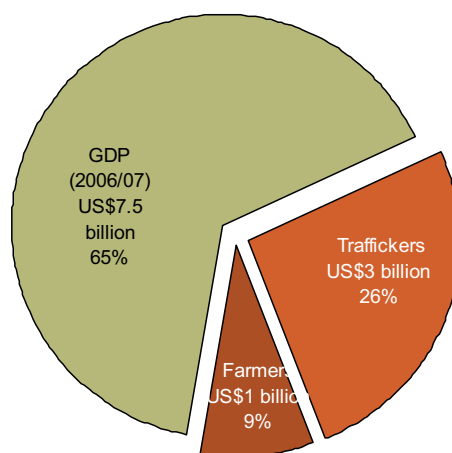
Based on opium production and reported opium prices, the farm-gate value of the opium harvest amounted to US\$ 1 billion in 2007. Higher production and only slightly lower prices resulted in a 32% increase of the overall farm-gate value of opium production over 2006 (760 million). The farm-gate value of opium as a proportion of GDP in 2007 (US\$ 7.5 billion) increased to 13%, compared to 11% in 2006.

Increased opium income for Hilmand farmers

In 2007, the total opium income for farmers in Hilmand province amounted to US\$ 528 million, which is more than half of total farmers opium-related income in Afghanistan in 2007. The Opium Winter Assessment Survey 2007 indicated that more than 80% of farming families in this province were involved in opium poppy cultivation, far more than in other provinces. According to the 2007 survey results, more than 35% of a farmer's annual cash income in Hilmand came from opium. These figures indicate the strong and growing dependence of the province's economy on opium.

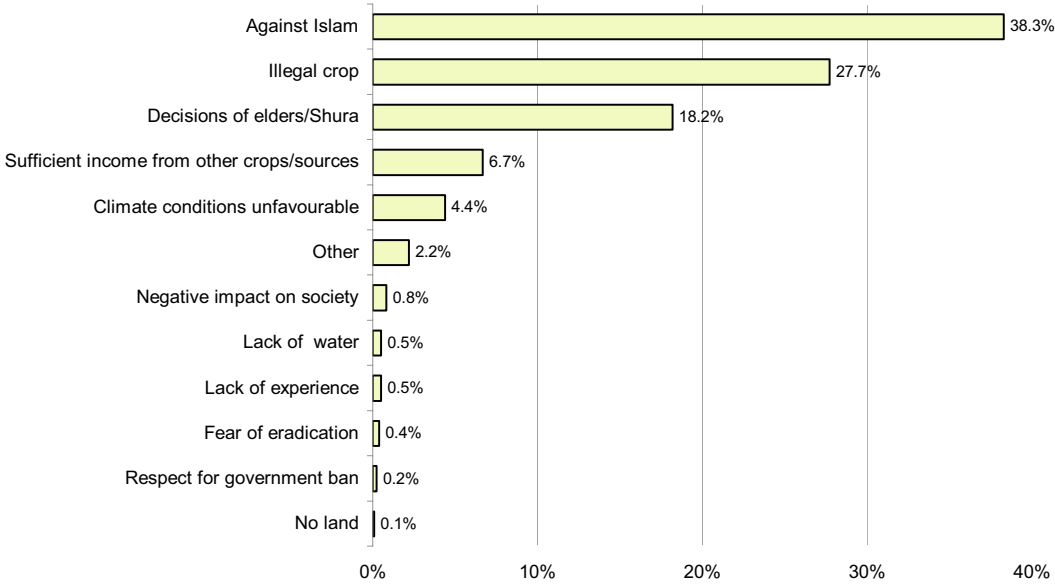
Value of opiates to neighbouring countries

The potential value of Afghanistan's 2007 opium harvest for the Afghan economy (accruing to farmers, laboratory owners and Afghan traffickers) was calculated to have reached about US\$4 billion, up from US\$3.1 billion in 2006 and \$2.7 billion in 2005. The increase was about 29% and thus slightly less than the increase in production (34%) – reflecting falling opium prices in neighbouring countries as Afghan drug exports increased. As compared to the year 2000 (US\$0.9 bn), the overall opium related income for the Afghan economy was more than four times higher. UNODC calculations suggest that Afghan traffickers earned US\$1.7 billion in opium exports (as compared to US\$1.2 billion in 2006) and 2.3 billion in heroin and morphine exports (as compared to 1.9 billion a year earlier).

Figure 8: Potential export value of opium production (US\$ billion)**Figure 9: Licit economy and opiate industry in Afghanistan in 2007****Reasons for cultivation/non-cultivation of opium poppy**

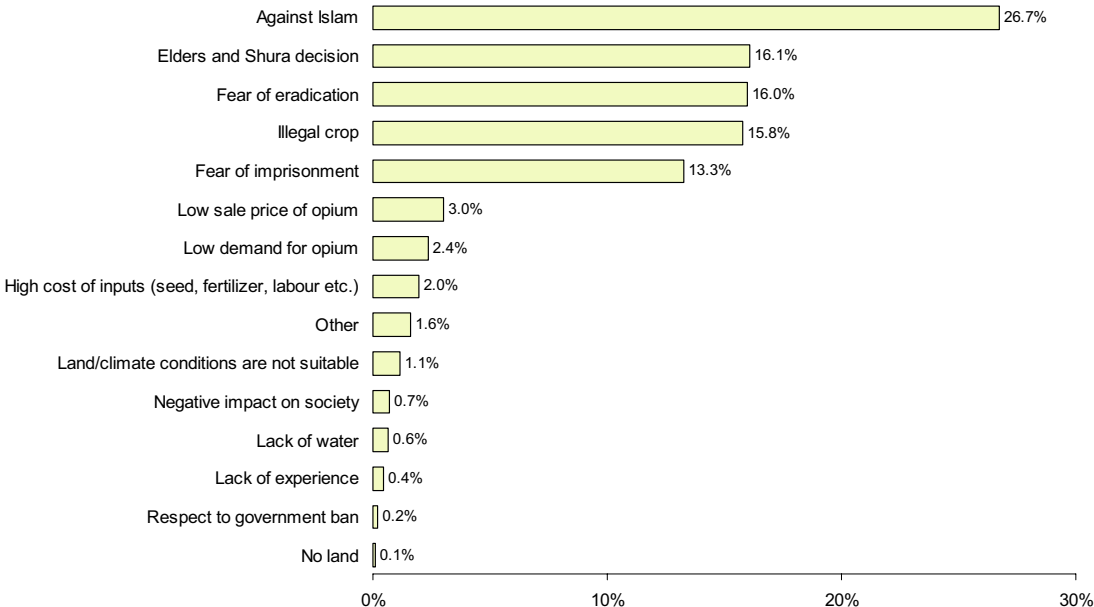
As part of the survey, 2,996 farmers in 1,500 villages across Afghanistan were asked for their reasons for growing or not growing opium poppy. Farmers who never cultivated opium poppy reported 'religion' as the main reason (38%), followed by 'illegal crop' (28%) and respect for a shura/elders decision (18%). Only 0.4% of the farmers did not cultivate opium poppy due to fear of eradication.

Figure 10: Reasons for never having cultivated opium poppy (n=1,494 farmers from 1,500 villages)



Within the group of farmers who stopped opium poppy cultivation in 2007, 27% reported that ‘religion’ was the main ground for their decision. This was followed by elders/shura decision (16%) and fear of eradication (16%). Sixteen per cent of responses indicated a recognition that opium poppy was an illegal crop, which can be interpreted as an impact of pre-planting awareness campaigns.

Figure 11: Reasons for not having cultivated opium poppy in 2007 (n=2,272 farmers from 1,500 villages)

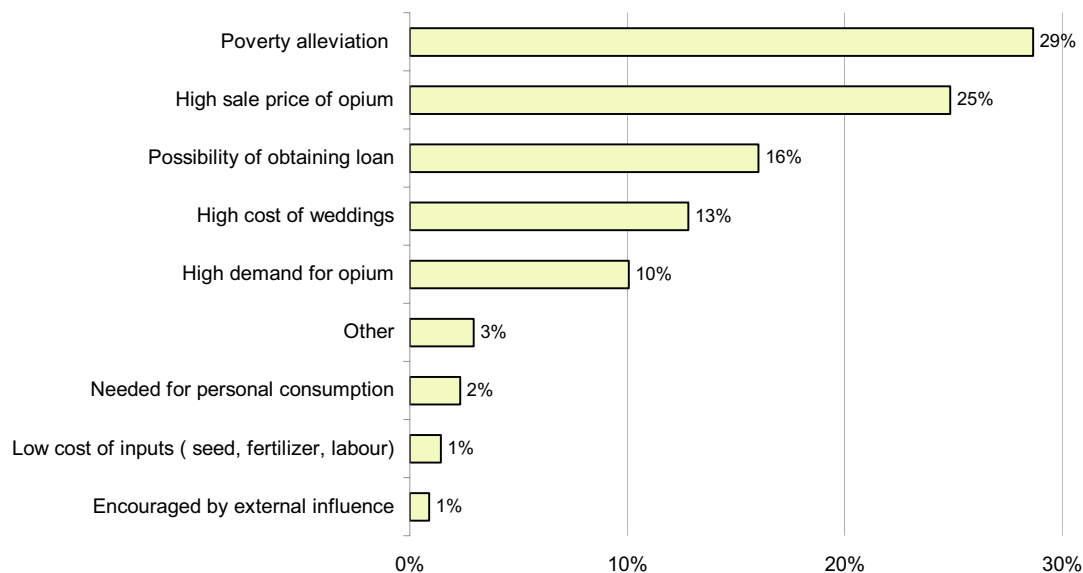


Shura decisions and religion are less important in the Southern Region of Afghanistan compared to the other regions. In the Central Region, ‘shura decisions’ and religion are determinants in farmers’ decisions about opium poppy cultivation. In the Eastern Region, farmers are more concerned about respecting the Government opium poppy ban than in other regions.

In 2007, the main reasons for opium poppy cultivation were ‘poverty alleviation’ and ‘high sale price of opium’ (29% and 25% respectively). In the Northern, North-Eastern and Central Regions farmers also reported that

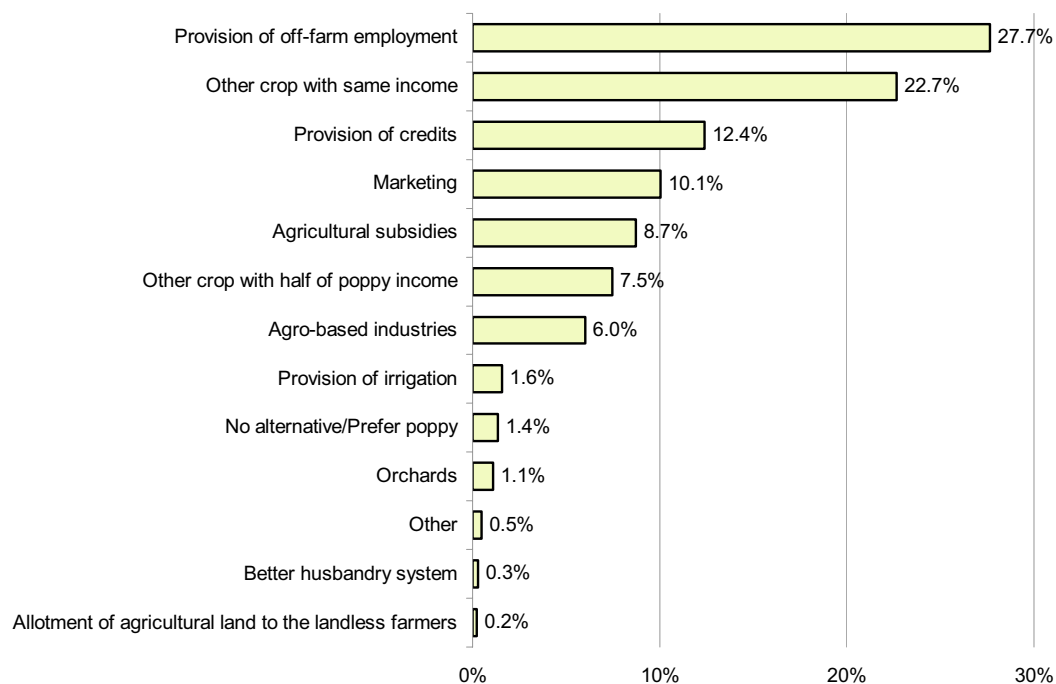
‘personal consumption’ was a dominant reason for opium poppy cultivation. ‘High wedding costs’ were mentioned by 13% of the respondents.

Figure 12: Reasons for opium poppy cultivation in 2007 (n=724 farmers from 1,500 villages)



The majority of the farmers (98%) reported that they would be ready to stop opium poppy cultivation should access to alternative livelihoods be provided. When asked about alternatives to opium poppy cultivation, 28% of farmers preferred the provision of off-farm employment, 23% preferred to cultivate other crops with the same income, 12% preferred provision of credits, 10% asked for marketing facilities and 9% preferred agricultural subsidies. Eight per cent of farmers preferred other crops with at least half of the income from opium.

Figure 13: Alternatives to opium poppy reported by opium poppy growing farmers (n=724)



The largest opium poppy cultivation provinces are not the poorest

Village survey data on income earned in 2006 show that the average annual cash income of opium poppy-growing households in 2006 was 42 per cent higher than that of non-opium poppy-growing households.

Opium poppy-growing households in southern Afghanistan earned a much higher annual cash income than those in other regions. Also non-opium poppy-growing households in southern Afghanistan reported higher incomes than those in other regions. Therefore, it is very difficult to view the increase in opium poppy cultivation in the Southern Region as correlating with poverty problems.

Of the six main opium poppy-growing provinces in 2007 (Hilmand, Kandahar, Uruzgan, Nimroz, Nangarhar and Farah), three (Farah, Nimroz and Nangarhar) reported lower cash income levels in 2006 than in 2005. The average annual household income in Hilmand, Kandahar and Uruzgan was at least double that of Farah, Nimroz and Nangarhar. In the poorest provinces of central and northern Afghanistan, the level of opium poppy cultivation in 2007 was negligible except in some parts of Badakhshan. This suggests that there is no a direct relationship between poverty and opium poppy cultivation.

Table 4: Annual cash income level of farmers, by opium poppy-growing status

Region	Average annual income of opium poppy-growing farmers in 2006 (US\$)	Average annual income of non-opium poppy-growing farmers in 2006 (US\$)	% difference between income of opium poppy-growing and non-growing farmers
Central	2 497	2 024	19%
Eastern	2 155	1 970	9%
North-eastern	2 843	2 187	23%
Northern	3 550	2 287	36%
Southern	5 654	3 864	32%
Western	1 802	1 535	15%
Overall	3 933	2 279	42%

Security and opium poppy cultivation show strong correlation

Security incidents in Afghanistan increased every year since 2003. In parallel with opium poppy cultivation, the number of security incidents increased sharply after 2004, particularly in the South and South-West. The majority of opium poppy cultivated in 2007 was concentrated in Hilmand, Kandahar, Uruzgan, Day Kundi, Farah and Nimroz provinces where security is very poor. Most of the districts in this region are not accessible to the UN and NGOs. Anti-government elements as well as drug traders are very active in this region. The security map shows the difference between southern and northern provinces in terms of security.

In Nangarhar province, opium poppy cultivation increased in the southern part of the province where security conditions are precarious. Moreover, some influential tribes decided to grow opium poppy in 2007. The resistance to opium poppy eradication was very strong in the area controlled by these powerful tribes.

A total of 19,047 ha of eradication is recorded

In 2007, total effective eradication (including Governor-led and AEF-led eradication) reached 19,047 hectares, up from 15,300 hectares in 2006. The details of eradication are as follows:

Table 5: Governor-led eradication figures by province (ha), 2007

Province	Eradication (ha) verified (includes eradication during lancing stage)	Eradication (ha) verified after first lancing	Effective verified eradication (ha) (eradication upto first lancing)	No. of fields eradication reported	No. of villages eradication reported	Total standing poppy after eradication in the reported villages (ha)	% of opium poppy eradication in surveyed villages
Badakhshan	1,311		1,311	2,475	273	517	72
Badghis	232		232	1,322	34	3,491	6
Baghlan	185		185	273	33	17	92
Balkh	14		14	25	3	11	56
Day Kundi	5		5	102	5	13	29
Farah	143		143	301	36	1,626	8
Faryab	337		337	1,456	110	85	80
Ghor	188		188	242	37	530	26
Hilmand	1,945	943	1,003	648	93	3,706	34
Hirat	70		70	259	65	270	21
Jawzjan	122		122	209	17	-	100
Kabul	14		14	53	5	8	64
Kandahar	7,905		7,905	3,028	425	4,951	61
Kapisa	10		10	398	34	45	18
Khost	18	2	16	171	12	-	100
Kunar	55	28	27	442	33	9	85
Kunduz	5		5	17	2	-	100
Laghman	802		802	2,497	100	111	88
Nangarhar	3,048	709	2,339	8,002	548	13,775	18
Nimroz	35		35	87	16	125	22
Nuristan	0		0	8	2	13	3
Parwan	4	3	1	144	4	-	100
Sari Pul	119	5	114	233	41	25	83
Takhar	716		716	2,249	140	268	73
Uruzgan	121		121	156	18	445	21
Zabul	183		183	67	23	61	75
Grand Total	17,587	1,689	15,898	24,864	2,109	30,103	37

In 2007, UNODC and MCN verifiers visited 2,109 villages (24,864 opium poppy fields) in 26 provinces where eradication had been carried out by Governor-led eradication teams. In 2006, surveyors visited some 1,400 villages in 19 provinces.

UNODC and MCN jointly verified a total of 15,898 ha of Governor-led poppy eradication. In accordance with the definition in the National Drug Control Strategy (NDCS) of “effective eradication”, eradication after the first lancing was not taken into consideration.

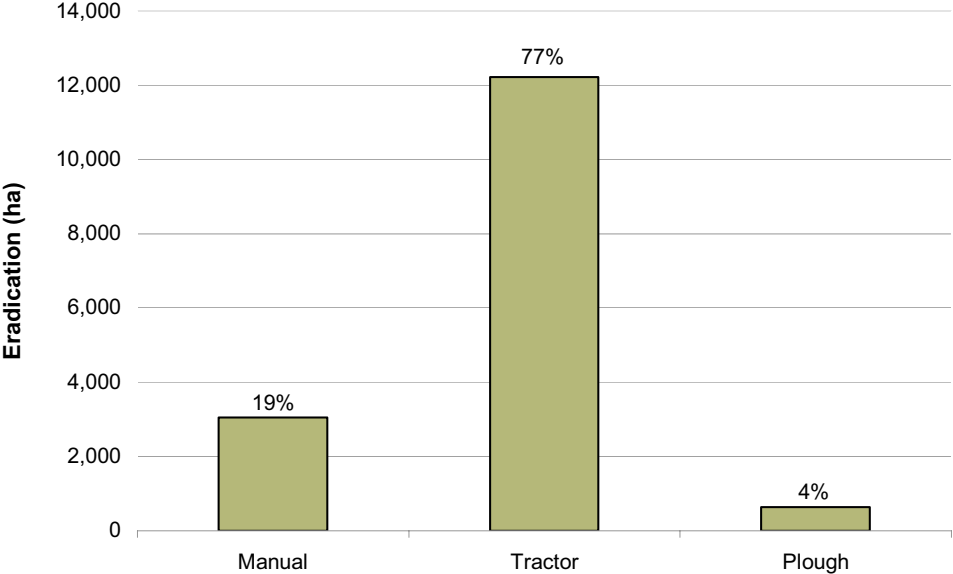
AEF reported a final figure for total eradication of 3,149 hectares, including 3,000 ha in Hilmand province, 83.44 ha in Uruzgan province and 65.22 ha in Takhar province. UNODC did not verify AEF-led eradication.

Most of the Governor-led eradication took place in Kandahar province (36 per cent), followed by Nangarhar (15 per cent), Hilmand (14 per cent) and Badakhshan (6 per cent).

On average, 63% of cultivated poppy was left standing after eradication teams had carried out their activities in the 2,109 villages visited by verifiers in 2007, though there was considerable regional variation.

The methods employed by the Governor-led eradication teams included tractor, animal-drawn plough and manual eradication (using sticks or sickles). 77% of the Governor-led eradication was carried out by tractor.

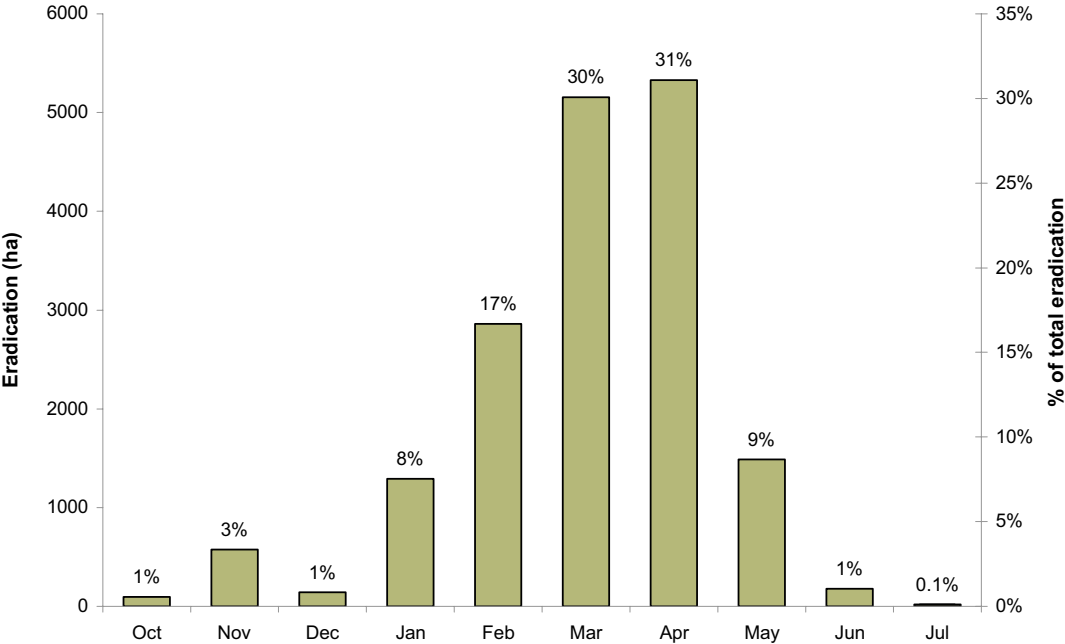
Figure 14: Area of eradicated opium poppy by eradication method



Timing and percentage of eradication by month

The graph below shows the timing and percentage of Governor-led eradication each month. Eradication activities were carried out chiefly in March 2007 (27%) and April 2007 (36%). Only 12% of eradication activities were carried out during the early months of cultivation (between November and January), clearly showing the delayed implementation of eradication policy in most of the provinces. Early eradication enabled farmers to cultivate alternative crops, when available, and no security problem was observed. Most of the security incidents happened close to the harvesting time.

Figure 15: Proportion of total area eradicated each month



Impact of eradication on cultivation

Eradication did not contribute to an effective reduction in cultivation in most of the provinces. In Badakhshan, eradication was carried out at an early stage, thus allowing farmers to cultivate alternative crops. This, together with a relatively successful pre-planting campaign, contributed to an overall decline in opium poppy cultivation. The extent of eradication since 2005 is shown in the table below.

Table 6: Total eradication in Afghanistan, 2005-2007

Year	Eradication (ha)	No. of provinces
2005	4,007	11
2006	13,378	19
2007	15,898	26

The Rapid Assessment Survey conducted in January 2007 indicated that the eradication campaign of 2006 had had no significant impact on cultivation at the national level in 2007. Sixty-three per cent of villages opted once again to cultivate poppy in 2007, despite having faced eradication in 2006.

Comparison of opium poppy eradication in 2007 and 2006

Eradication (Governor-led and AEF) in 2007 (19,047 ha) increased by 24% as compared to total eradication in 2006 (15,300 ha). In total, Governor-led eradication amounted to 15,898 ha in 2007, as compared to 13,378 ha in 2006. This is a 19 per cent increase. Eradication in 2007 was more intensive during its early phase (from January to March) than in 2006.

Security incidents during opium poppy eradication

In 2007, there was much more resistance to eradication than in 2006. Several security incidents were reported in 2007. Sixteen security incidents in which eradication was resisted were reported from seven provinces, namely Nangarhar, Kandahar, Farah, Laghman, Hilmand, Badghis and Badakhshan. Fifteen policemen and four farmers died as a result of the incidents. Thirty-one people were severely injured, and several tractors used in eradication were burned by farmers. The highest number of incidents was reported from Nangarhar, followed by Kandahar and Farah.

Table 7: Summary of security incidents

Province	No. of security incidents	No. of fatalities among police personnel	No. of fatalities among farmers	No. of injuries	No. of tractors burned
Nangarhar	7	4	3	13	3
Kandahar	3	1	1	7	1
Farah	2	6		4	6
Laghman	1	2		5	
Hilmand	1	2		2	
Badghis	1				
Badakhshan	1				
Total	16	15	4	31	10

Cannabis cultivation is increasing and becoming as lucrative as opium poppy

In 2007, it was estimated that cannabis cultivation increased to 70,000 ha from 50,000 ha in 2006. The increase gives reason for concern. Although this survey was not designed to estimate cannabis cultivation in Afghanistan,

the socio-economic data collected from 1,500 villages and interviews with 4,500 farmers gives an indication of cannabis cultivation trends.

Cannabis prices have been increasing in the last two years and ranged between US\$ 48/kg and US\$ 61/kg in June 2007 with an average of US\$ 53/kg. Taking into account that cannabis yields about twice the quantity of drug per hectare compared to opium poppy, and requires lower investments for cultivation, cannabis farmers may earn the same amount per hectare as opium farmers or more. As a consequence, farmers who do not cultivate opium poppy may turn to cannabis cultivation.

Drug Trafficking

According to surveyors's reports, in 2007, the number of heroin laboratories in Afghanistan increased. It is common knowledge that there are important opium markets and heroin laboratories in the Musa Qala and Sangin districts of Hilmand. However, these laboratories and markets have so far not been destroyed. In the southern and eastern parts of Afghanistan, opiate and precursor trafficking is mainly controlled by tribes whereas in the northern provinces they are controlled by local commanders.

According to the Afghan Government, there are at least 167 unofficial border crossing points between Afghanistan and neighboring countries. This figure seems to be rather on the low side as most of the Pakistan-Afghan border in the South and the Afghan-Iran border in the South-West are not well controlled. There are probably hundreds of unofficial border crossing points between Afghanistan and Tajikistan, Uzbekistan, Turkmenistan, Iran and Pakistan.

Most of the opium produced in Afghanistan is converted to morphine and/or heroin within the country (58%). However, the precursors needed for this conversion are not available in Afghanistan, which means that they are imported via neighboring countries.

Methodology

The methodology of the Opium Survey in 2007 covered various aspects such as estimations of the extent of opium poppy cultivation, opium yield and production, opium prices and the opium poppy growth calendar. It also included socio-economic aspects such as the number of families involved in opium poppy cultivation, the number of opium addicts in Afghanistan and the income from opium to farmers and traffickers. The survey methodology was based on a sampling approach that combined the use of satellite imagery and extensive field visits.

In 2007, high-resolution satellite images were acquired for 118 sample locations covering 24 provinces. All locations were covered at two different growth stages of poppy: at the flowering or capsule stage and after lancing of poppy capsules. These images covered 11 per cent of all agricultural land (716,100 ha) in the 24 provinces. In 24 provinces, satellite data was the sole data source used to estimate the area under opium poppy in 2007. In the remaining 10 provinces, opium poppy cultivation was estimated on the basis of assessments by surveyors of the extent of opium cultivation in sampled villages. The distribution was based on the number of cells in the sampling frame and total arable land in each province.

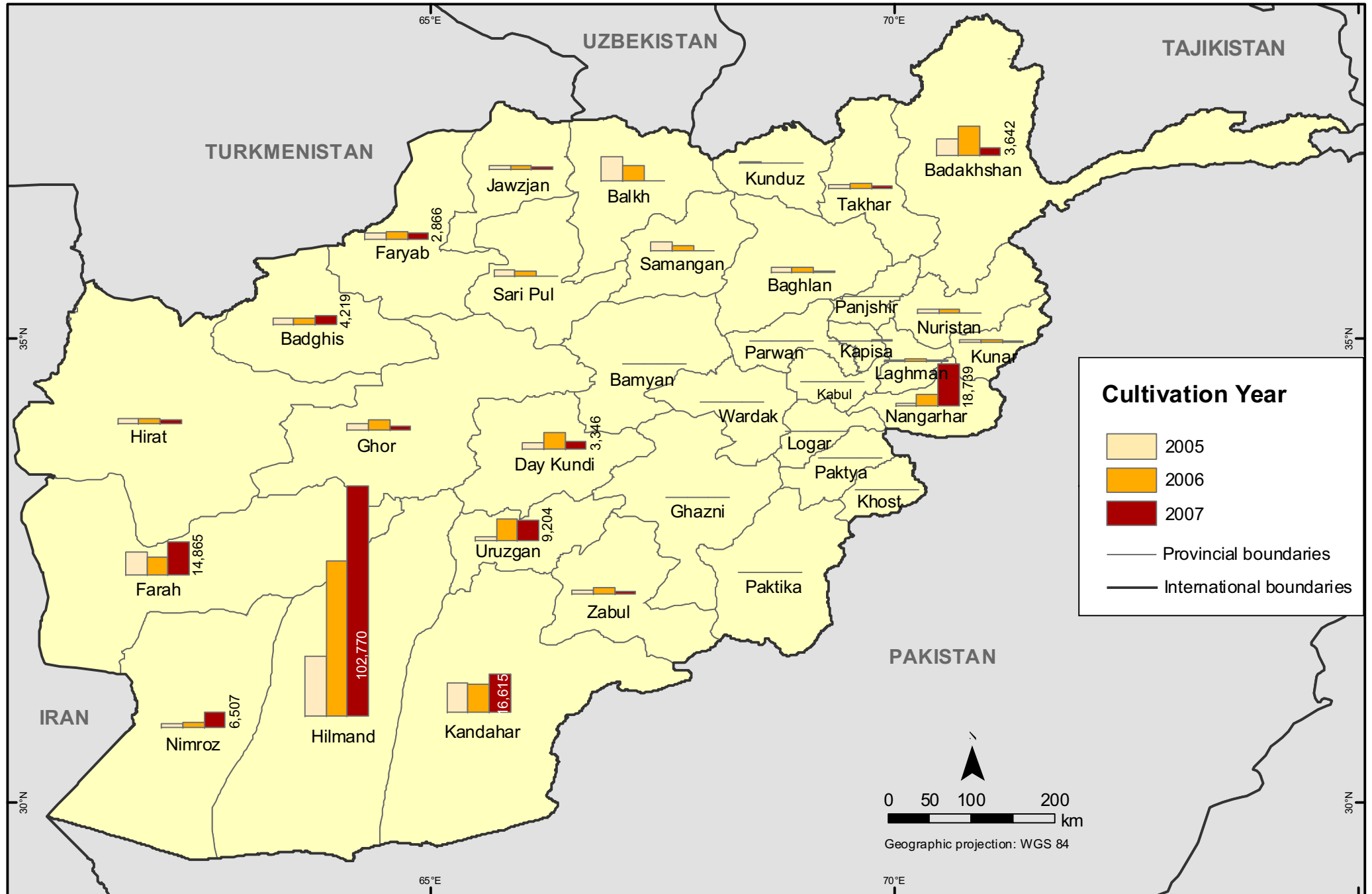
Additionally, some 126 surveyors visited 1500 villages to collect data on opium poppy cultivation in 34 provinces. Villages were stratified according to the elevation and selection was done by using systematic random selection method in each group. Selected villages were geographically and statistically well distributed in all 34 provinces. Surveyors conducted interviews with 2,996 farmers and 1500 headmen. For provinces not covered by satellite imagery, opium poppy cultivation estimates were derived from ground survey findings. For yield survey, a total of 531 fields in 185 villages were visited. A total 17,420 capsules were measured from 1,593 plots.

The eradication verification survey was implemented separately by 107 surveyors who visited 2109 villages and around 24,864 opium poppy fields.

In 2007 (including the Rapid Assessment Survey, the Eradication Verification Survey and the Annual Opium Survey), a total of 412 surveyors collected ground data/information on opium poppy cultivation, eradication and socio-economic variables in Afghanistan.

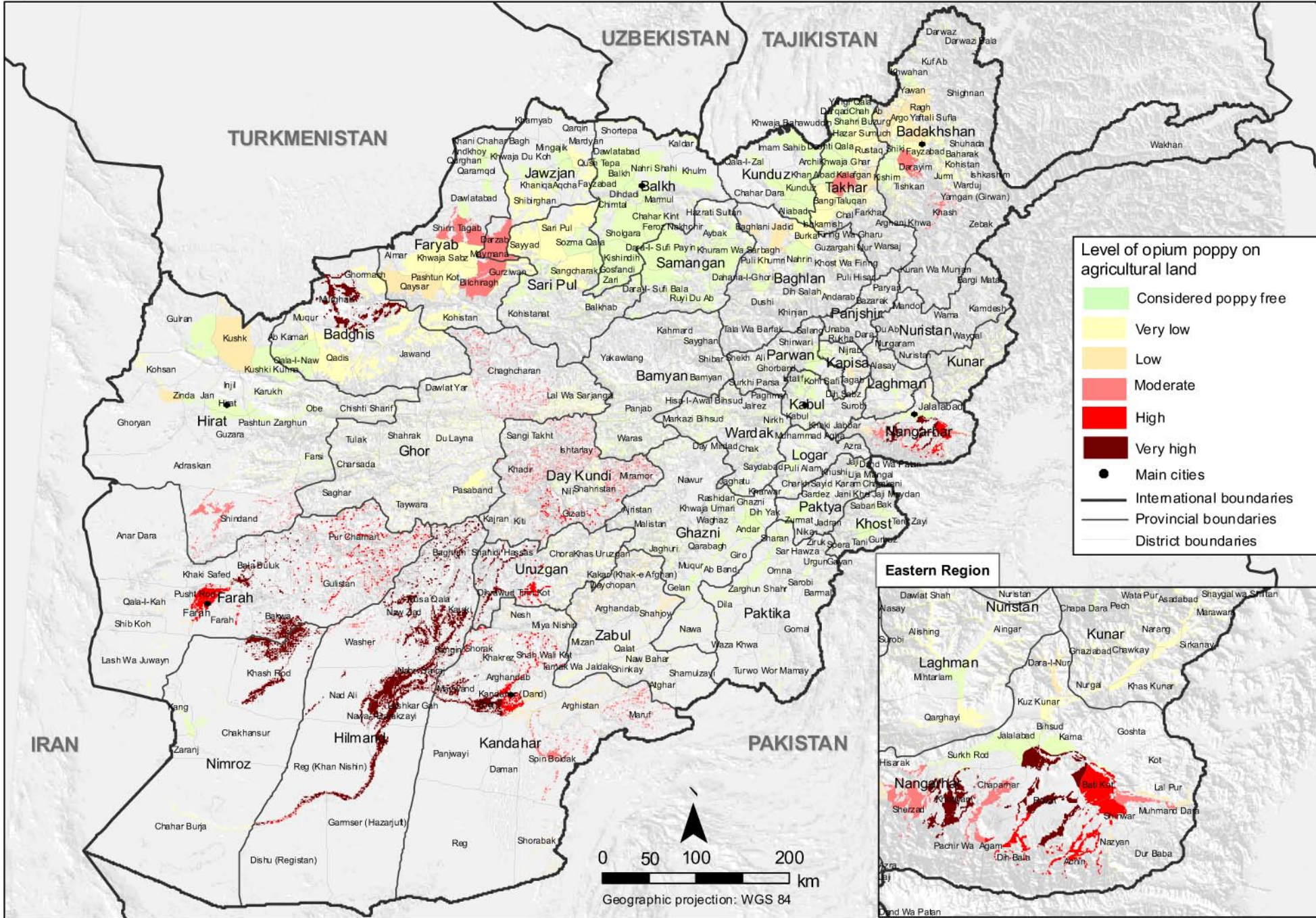
For all surveys experienced surveyors were selected from the UNODC surveyor pool like in previous years, based on their previous performance. As part of the capacity building in Afghan Government, trainings for surveyors were given jointly by MCN/UNODC local staff. MCN/UNODC survey coordinators monitored and supervised the survey in their concerned regions.

Opium poppy cultivation in Afghanistan, 2005-2007

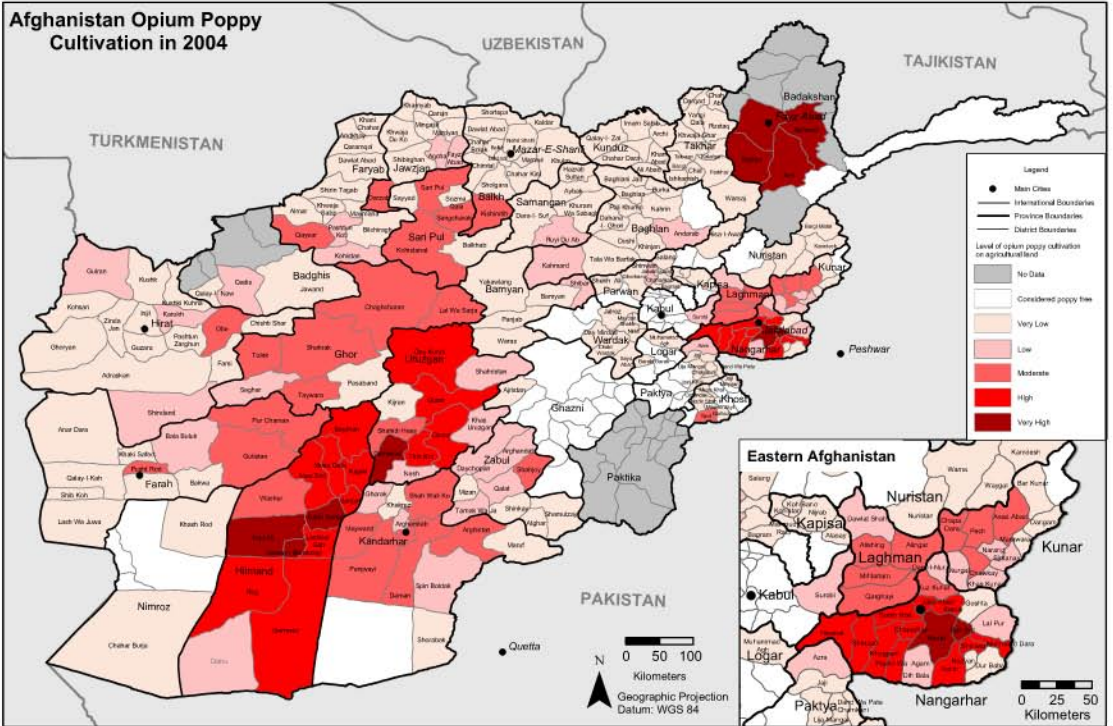


Source: Government of Afghanistan - National monitoring system implemented by UNODC
 Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

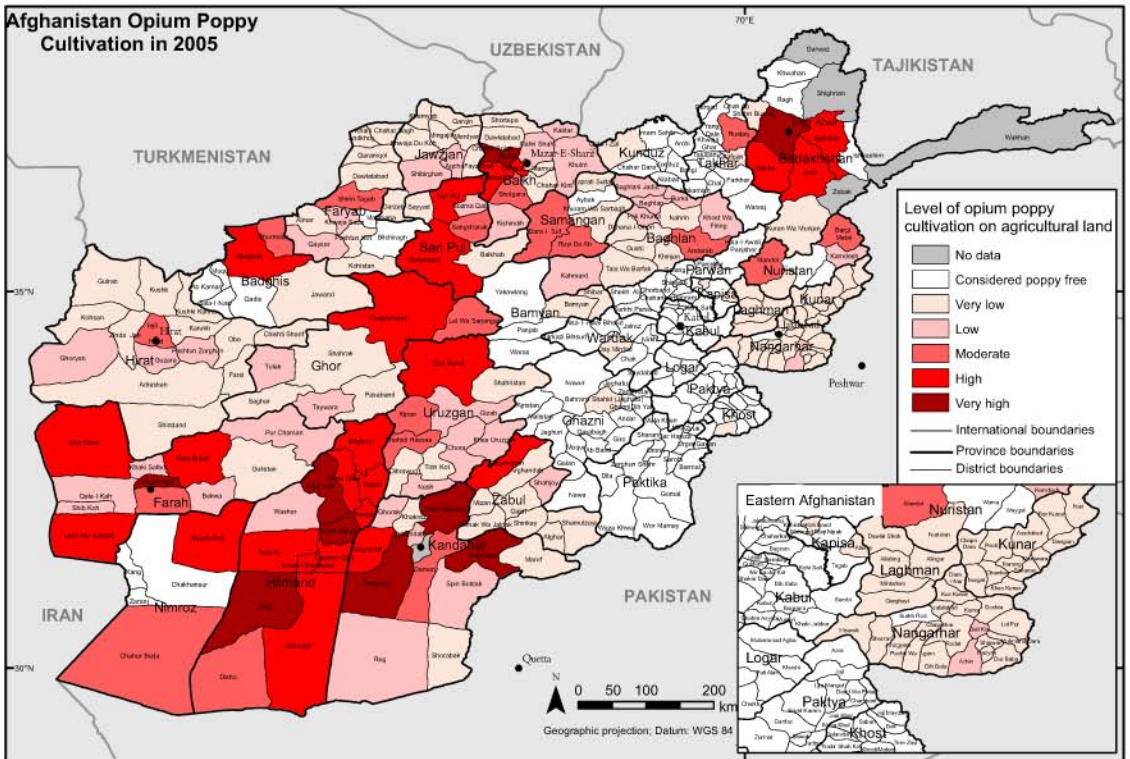
Agricultural land and level of opium poppy cultivation in Afghanistan, 2007



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

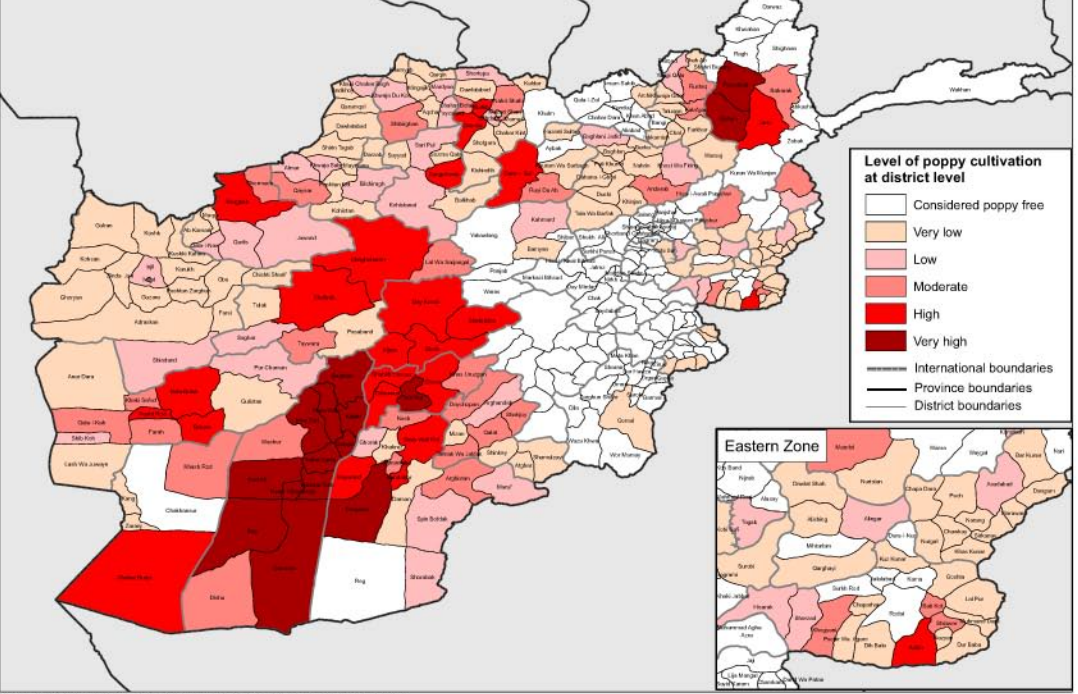


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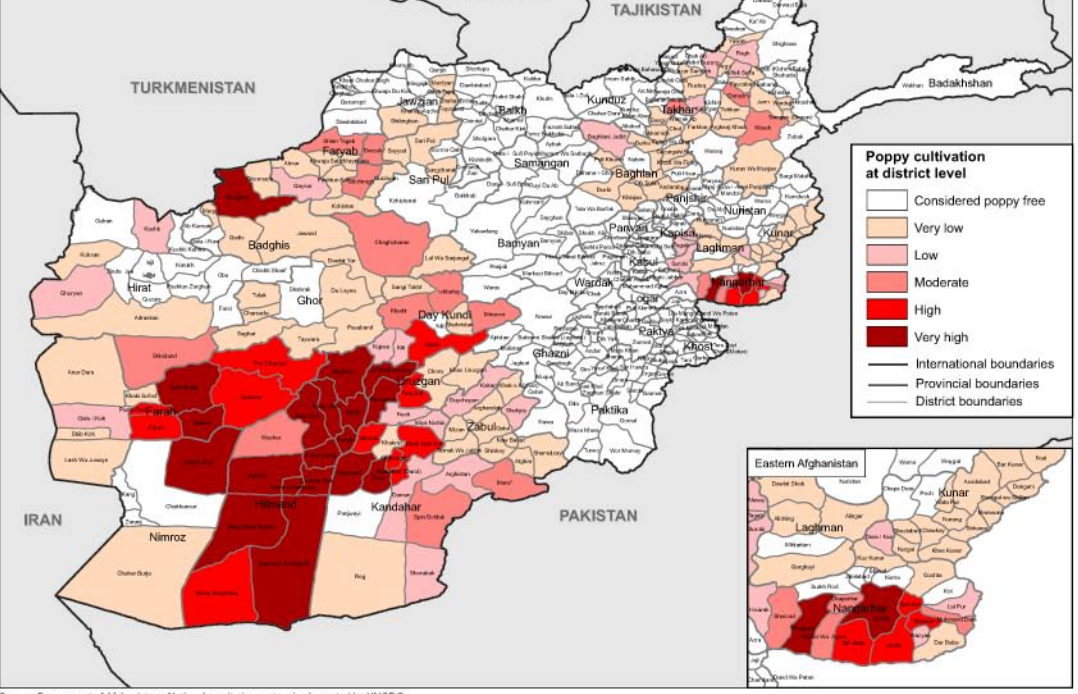
Source: Government of Afghanistan - National monitoring system implemented by UNODC
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Afghanistan Opium Poppy Cultivation in 2006



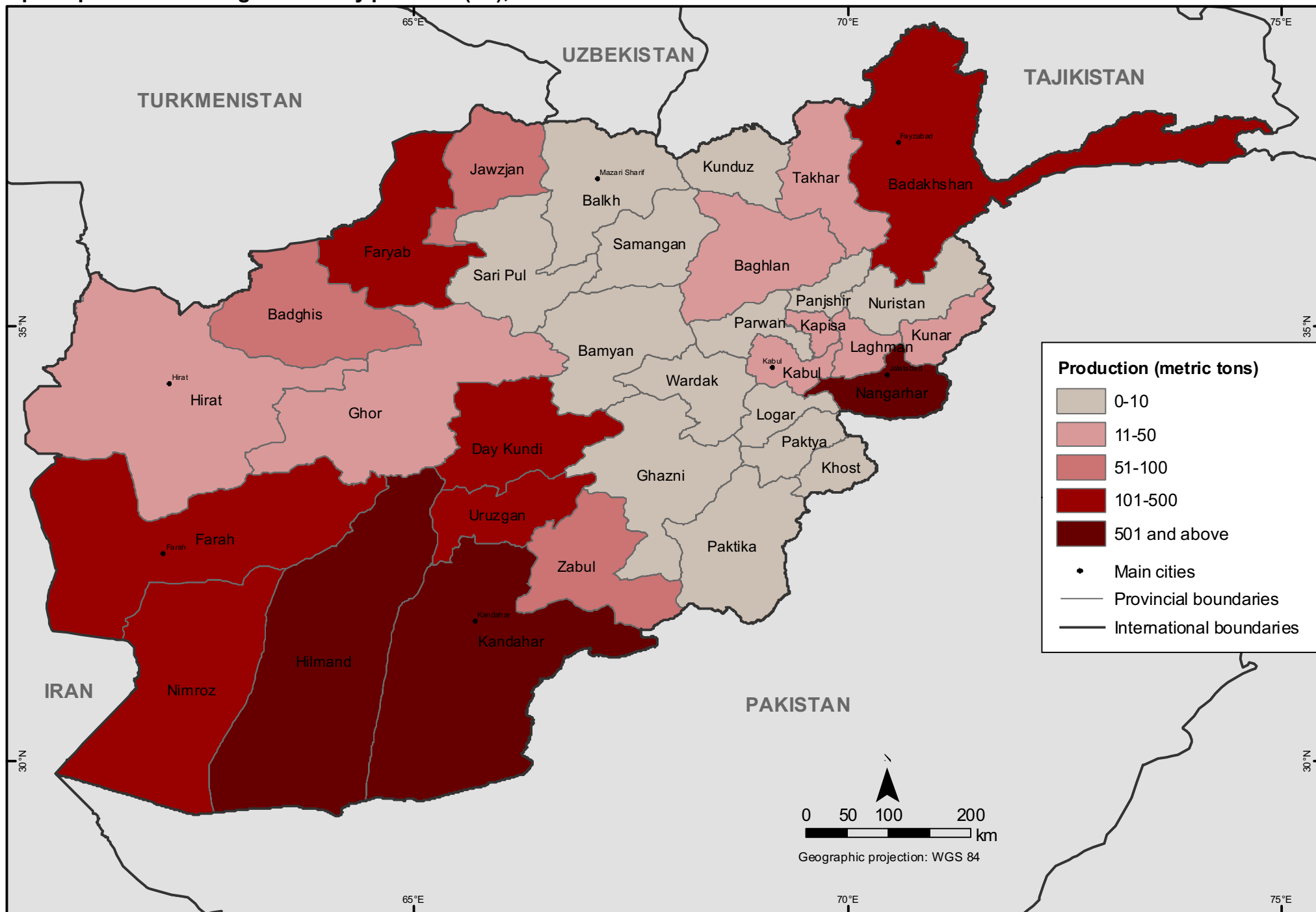
Source: Government of Afghanistan - National monitoring system implemented by UNODC
 Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Afghanistan Opium Poppy Cultivation in 2007



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

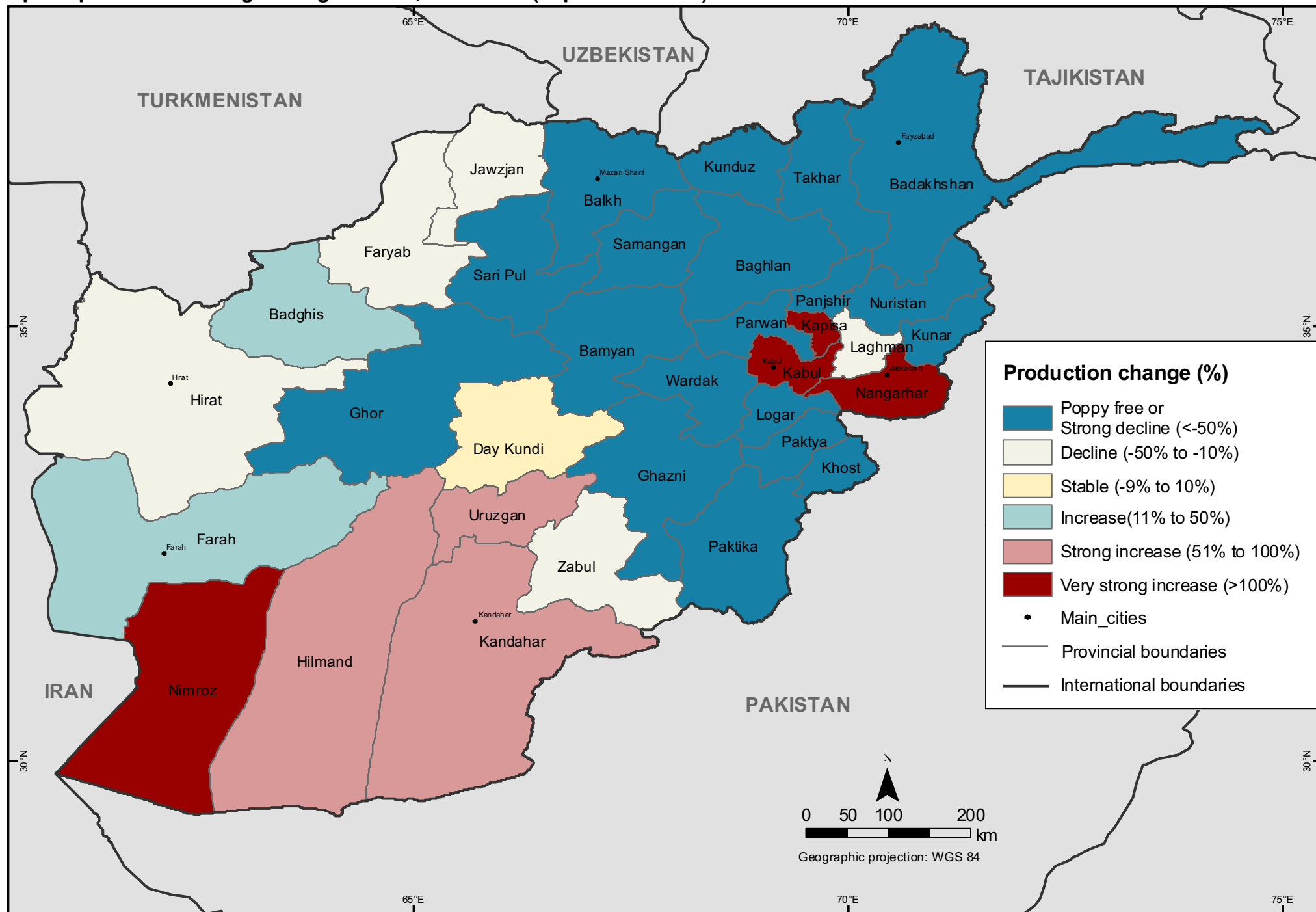
Opium production in Afghanistan by province (mt), 2007



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

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

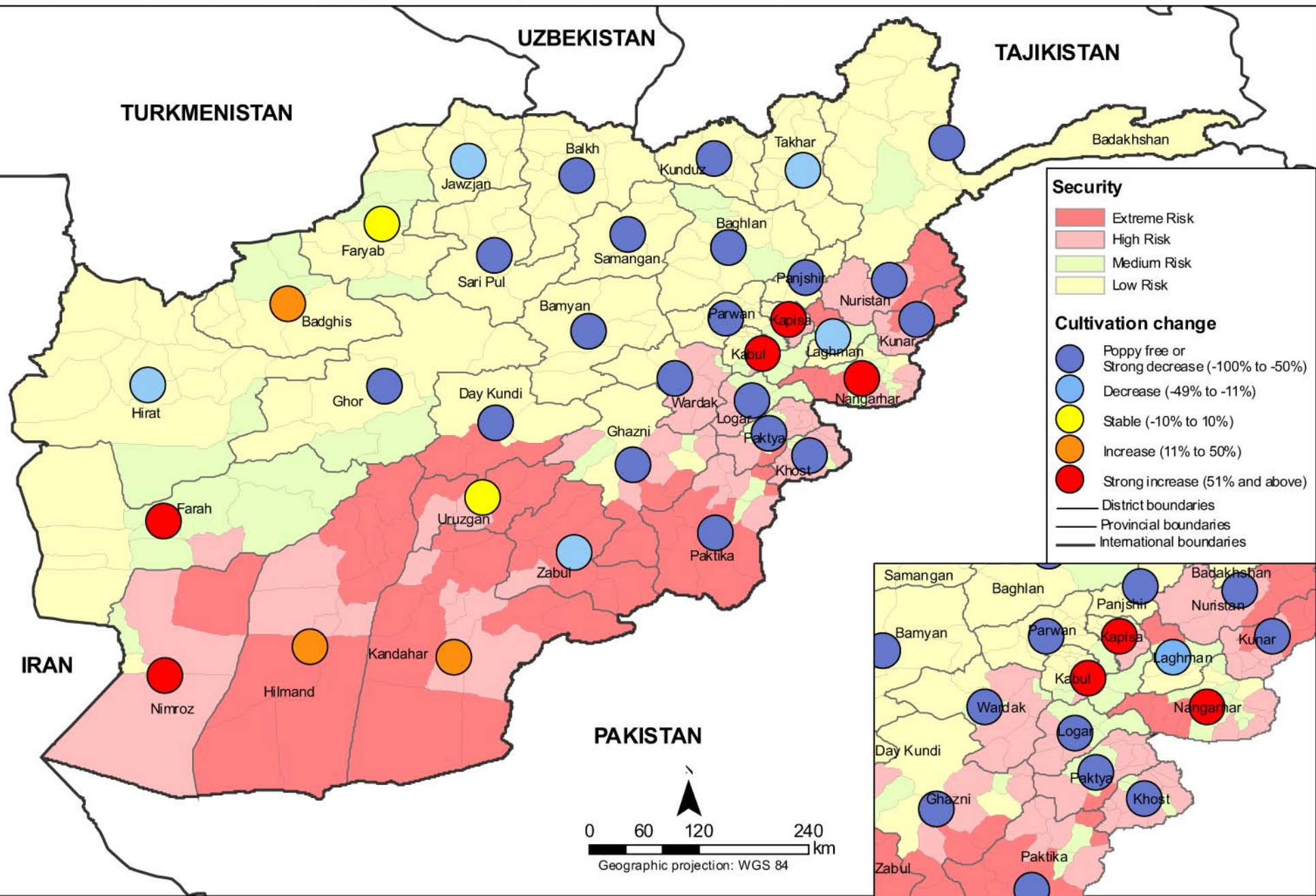
Opium production change in Afghanistan, 2006-2007 (at province level)



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

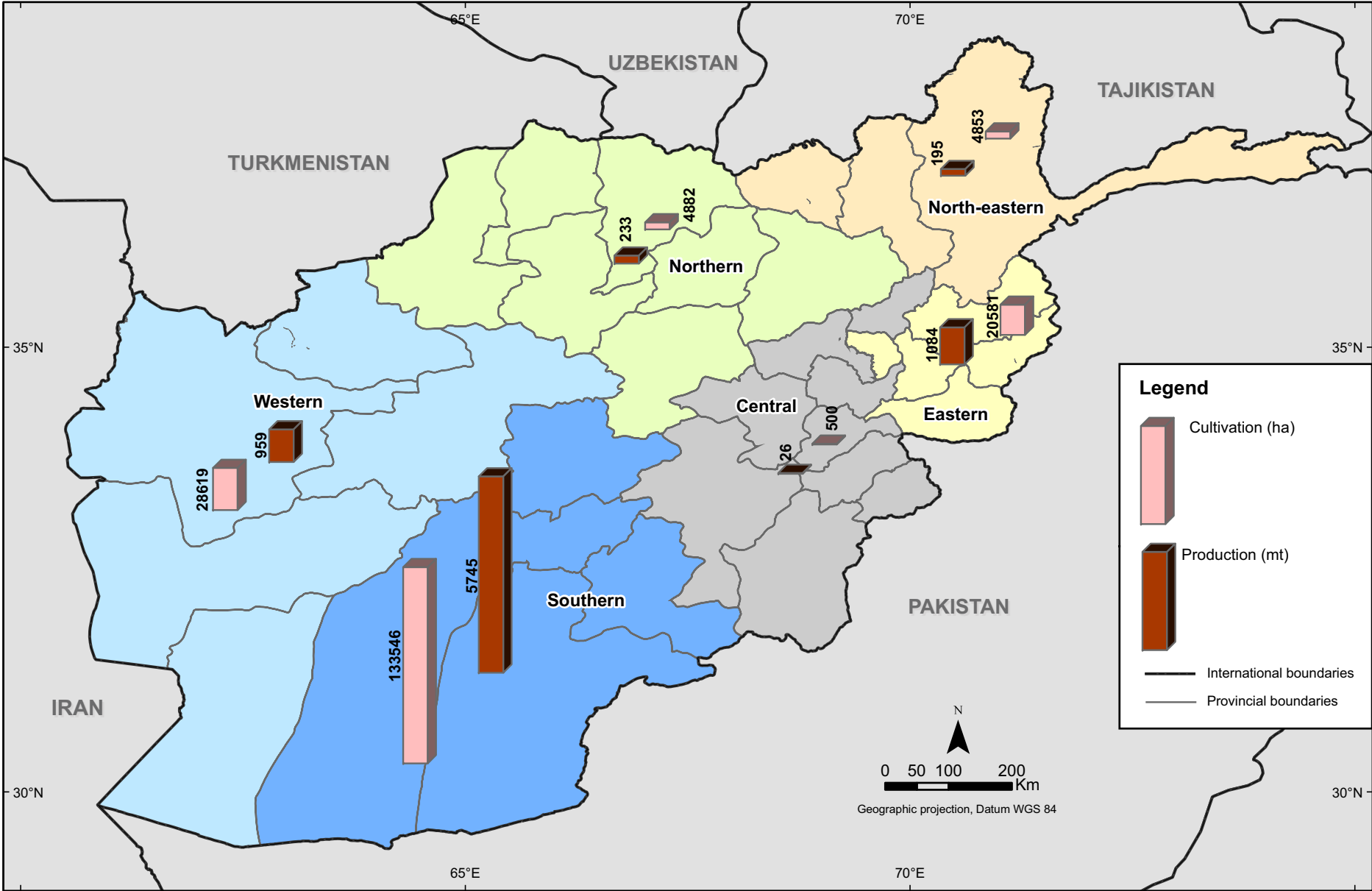
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Security map (as at 15 May 2007) and opium poppy cultivation change in Afghanistan by province, 2006-2007



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

Regional opium poppy cultivation and production in Afghanistan, 2007



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

1 INTRODUCTION

The Afghanistan Opium Survey is implemented annually by the United Nations Office on Drugs and Crime (UNODC) and, since 2003, in collaboration with the Afghan Government. The survey team collects and analyses information on the location and extent of opium poppy cultivation, potential opium production and the socio-economic dimensions of the problem. The results provide a detailed picture 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 serious implications both for Afghanistan and for the international community.

The Opium Survey is implemented within the technical framework of the UNODC Illicit Crop Monitoring Programme (ICMP). The objective of ICMP is to assist the international community in monitoring the extent and evolution of illicit crops within the context of the elimination objective adopted at the United Nations General Assembly Special Session on Drugs in June 1998. Under ICMP, monitoring activities are currently supported by UNODC in the five other countries worse affected by illicit opium poppy and coca bush cultivation, namely Myanmar and Lao People's Democratic Republic in Asia and Colombia, Peru and Bolivia in Latin America and Morocco, which is one of the main areas of illicit cannabis cultivation.

The 2007 Afghanistan Opium Survey was implemented under project AD/AFG/F98, "Monitoring of opium production in Afghanistan", and project AD/GLO/C93, "Illicit crop monitoring programme support", with financial contributions from the Governments of Finland, the United Kingdom and the United States of America, and from the European Commission.

2 FINDINGS

2.1 Opium poppy cultivation

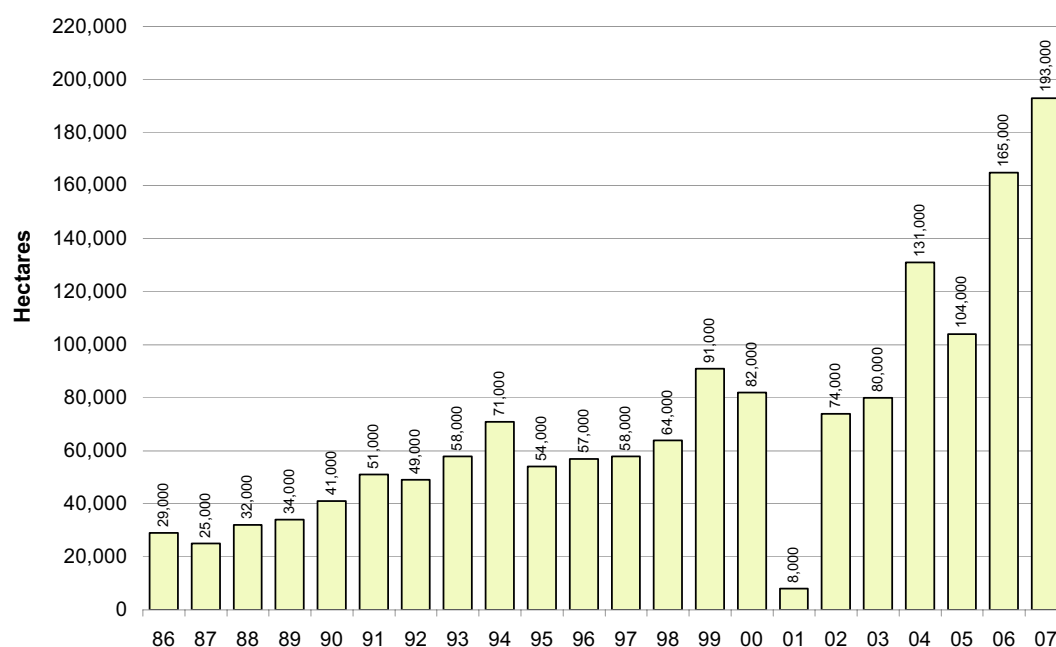
The estimated area under opium poppy cultivation in Afghanistan increased by 17 per cent to 193,000 hectares in 2007 (90% confidence interval: 177,000 to 209,000 ha). This increase is in line with the findings of the Rapid Assessment Survey implemented in January and February 2007 (*Winter Opium Rapid Assessment Survey*, UNODC Afghanistan, February, 2007).

In 2007, opium poppy cultivation in Afghanistan increased by more than 10 per cent in eight provinces in the south, east and west, while remaining stable (less than 10 per cent variation) in two provinces (Faryab and Uruzgan). Cultivation was found to have decreased in 11 provinces, chiefly in the north and north-east. The survey did not find any opium poppy cultivation in those provinces that were poppy-free in 2006, namely Ghazni, Logar, Paktya, Paktika, Panjshir and Wardak. A further seven provinces — Balkh, Khost, Kunduz, Nuristan, Parwan, Samangan and Sari Pul — were found to be poppy-free in 2007.¹⁰ Poppy-free status of Balkh province in 2007 is considered major achievement since there was significant opium poppy cultivation (7,232 ha) in 2006. Thus, a total of 13 provinces were poppy free in 2007.

Table 8: Opium poppy cultivation trends, 2006 - 2007

Opium poppy cultivation trend	2006	2007
Increase	14	8
Decrease	2	11
Stable	12	2
Poppy-free	6	13

Figure 16: Opium poppy cultivation in Afghanistan (hectares), 1986 – 2007



Sources: UNODC opium surveys for 1994-2007 and *Global Illicit Drug Trends 2001* (UNODC) for previous years.

¹⁰ Definition of opium poppy free status in 2007: province with less than 100 ha of opium poppy.

Opium poppy cultivation in Hilmand province increased by almost half to 102,770 ha, compared to 69,324 ha in 2006. Thus, in 2007, Hilmand alone accounted for 53 per cent of total opium poppy cultivation and 54 per cent of opium production nationwide. Between 2002 and 2007, cultivation in Hilmand province increased threefold. The area under opium poppy cultivation in Hilmand in 2007 is almost equal to the total area cultivated in Afghanistan in 2005.

Opium poppy cultivation in the south increased by 31,646 ha (31 per cent), which accounted for the main part of the overall increase in opium poppy cultivation in 2007. Since 2006, as a result of the security problems in the south, so-called Anti-Government Elements (AGE) are known to have encouraged farmers to cultivate opium poppy and even threatened them when they were reluctant to do so. The total area under opium poppy cultivation in the southern region in 2007 (133,546 hectares) was greater than that throughout Afghanistan in 2005 (104,000 ha). Due to insurgency and ongoing war, a large part of the southern region is closed to United Nations missions. Eradication campaigns carried out by Governors and Afghan Eradication Forces (AEF) did not prevent an increase in opium cultivation in that region. Large-scale cultivation took place in Farah (14,865 ha), Hilmand (102,770 ha), Kandahar (16,615 ha), Nangarhar (18,739 ha), Nimroz (6,507 ha) and Uruzgan (9,204 ha). The largest decreases were found in Balkh (poppy-free) and Badakhshan (72 per cent reduction).

Table 9: Regional distribution of opium poppy cultivation, 2006 – 2007

Region	2006 (ha)	2007 (ha)	Change 2006-2007 %	2006 (ha) as % of total	2007 (ha) as % of total
Southern	101 900	133 546	31%	62%	69%
Northern	19 267	4 882	-75%	12%	3%
Western	19 820	28 619	44%	12%	15%
North-eastern	15 336	4 853	-68%	9%	3%
Eastern	8 312	20 581	148%	5%	11%
Central	337	500	48%	0.2%	0.3%
Rounded Total	165 000	193 000	17%	100%	100%

Figure 17: Global distribution of opium poppy cultivation (hectares), 1990 – 2007

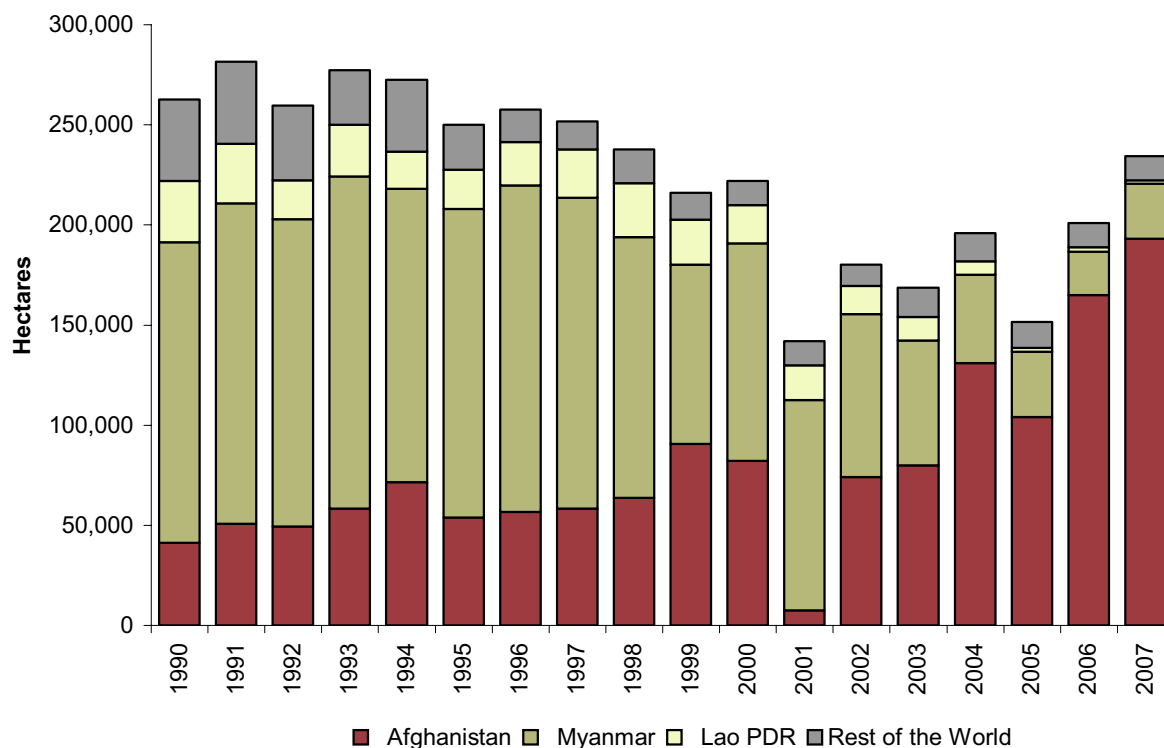


Table 10: Main opium poppy cultivation provinces in Afghanistan(hectares), 2007

Province	2003	2004	2005	2006	2007	Change 2006-2007	% of total in 2007	Cumulative %
Hilmand	15 371	29 353	26 500	69 324	102 770	48%	53%	53%
Nangarhar	18 904	28 213	1 093	4 872	18 739	285%	10%	63%
Kandahar	3 055	4 959	12 989	12 619	16 615	32%	9%	72%
Farah	1 700	2 288	10 240	7 694	14 865	93%	8%	79%
Uruzgan	4 698	N/A	2 024	9 773	9 204	-6%	5%	84%
Nimroz	26	115	1 690	1 955	6 507	233%	3%	87%
Rest of the country	36 246	66 072	49 464	58 763	24 281	-59%	13%	100%
Rounded total	80 000	131 000	104 000	165 000	193 000	17%		

Table 11: Opium poppy cultivation (2004-2006) and eradication (2006-2007) in Afghanistan

PROVINCE	Cultivation 2004 (ha)	Cultivation 2005 (ha)	Cultivation 2006 (ha)	Cultivation 2007 (ha)	Change 2006-2007 (ha)	Change 2006-2007 (%)	Total area of eradication in 2006 (ha)	Total area eradicated in 2007 (ha)
Kabul	282	0	80	500	420	525%	0	14
Khost	838	0	133	0	-133	-100%	0	16
Logar	24	0	0	0	0	0%	0	0
Paktia	1,200	0	0	0	0	0%	0	0
Panjshir	0	0	0	0	0	0%	0	0
Parwan	1,310	0	124	0	-124	-100%	0	1
Wardak	1,017	106	0	0	0	0%	0	0
Ghazni	62	0	0	0	0	0%	0	0
Paktika	0	0	0	0	0	0%	0	0
Central Region	4,733	106	337	500	163	48%	0	31
Kapisa	522	115	282	835	553	196%	0	10
Kunar	4,366	1,059	932	446	-486	-52%	44	27
Laghman	2,756	274	710	561	-149	-21%	9	802
Nangarhar	28,213	1,093	4,872	18,739	13,867	285%	337	2,339
Nuristan	764	1,554	1,516	0	-1,516	-100%	5	0
Eastern Region	36,621	4,095	8,312	20,581	12,269	148%	395	3,178
Badakhshan	15,607	7,370	13,056	3,642	-9,414	-72%	921	1,311
Takhar	762	1,364	2,178	1,211	-967	-44%	35	781
Kunduz	224	275	102	0	-102	-100%	0	5
North-eastern Region	16,593	9,009	15,336	4,853	-10,483	-68%	956	2,097
Baghlan	2,444	2,563	2,742	671	-2,071	-76%	22	185
Balkh	2,495	10,837	7,232	0	-7,232	-100%	2,370	14
Bamyan	803	126	17	0	-17	-100%	0	0
Faryab	3,249	2,665	3,040	2,866	-174	-6%	264	337
Jawzjan	1,673	1,748	2,024	1,085	-939	-46%	48	122
Samangan	1,151	3,874	1,960	0	-1,960	-100%	136	0
Sari Pul	1,974	3,227	2,252	260	-1,992	-88%	1,981	114
Northern Region	13,789	25,040	19,267	4,882	-14,385	-75%	4,821	772
Hilmand	29,353	26,500	69,324	102,770	33,446	48%	4,973	4,003
Kandahar	4,959	12,989	12,619	16,615	3,996	32%	2,829	7,905
Uruzgan	11,080	2,024	9,703	9,204	-499	-5%	0	204
Zabul	2,977	2,053	3,210	1,611	-1,599	-50%	0	183
Day Kundi	0	2,581	7,044	3,346	-3,698	-52%	28	5
Southern Region	48,369	46,147	101,900	133,546	31,646	31%	7,830	12,300
Badghis	614	2,967	3,205	4,219	1,014	32%	602	232
Farah	2,288	10,240	7,694	14,865	7,171	93%	562	143
Ghor	4,983	2,689	4,679	1,503	-3,176	-68%	0	188
Hirat	2,531	1,924	2,287	1,525	-762	-33%	113	70
Nimroz	115	1,690	1,955	6,507	4,552	233%	26	35
Western Region	10,531	19,510	19,820	28,619	8,799	44%	1,303	668
Total (rounded)	131,000	104,000	165,000	193,000	28,000	17%	15,300	19,047

SOUTHERN REGION (Hilmand, Kandahar, Uruzgan, Zabul)

The record increase in opium poppy cultivation and opium production in the southern provinces in 2007 was the main reason for the overall increase in Afghanistan. A total of 133,546 ha of opium poppy were cultivated in the southern region, which is equivalent to 69 per cent of total cultivation in Afghanistan. A total of 5,745 metric tons of opium was produced, representing 70 per cent of total production in Afghanistan in 2007.

Table 12: Opium poppy cultivation and eradication in the southern region (hectares), 2004 – 2007

PROVINCE	Cultivation 2004 (ha)	Cultivation 2005 (ha)	Cultivation 2006 (ha)	Cultivation 2007 (ha)	Change 2006-2007 (ha)	Change 2006-2007 (%)	Total area of eradication in 2006 (ha)	Total area eradicated in 2007 (ha)
Hilmand	29,353	26,500	69,324	102,770	33,446	48%	4,973	4,003
Kandahar	4,959	12,989	12,619	16,615	3,996	32%	2,829	7,905
Uruzgan	11,080	2,024	9,703	9,204	-499	-5%	0	204
Zabul	2,977	2,053	3,210	1,611	-1,599	-50%	0	183
Day Kundi	0	2,581	7,044	3,346	-3,698	-52%	28	5
Southern Region	48,369	46,147	101,900	133,546	31,646	31%	7,830	12,300

Table 13: Opium production in the southern region (metric tons), 2006 – 2007

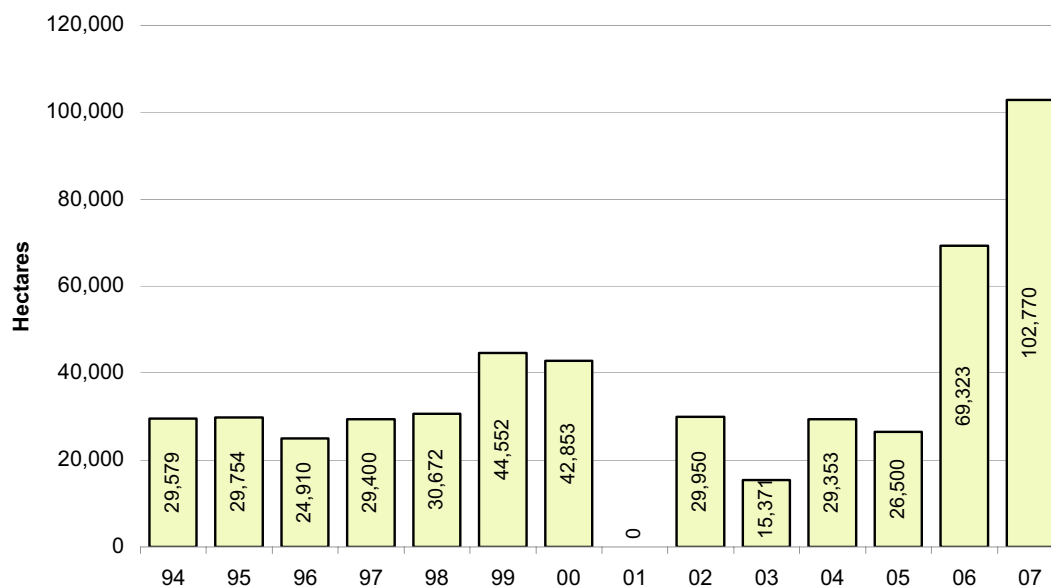
PROVINCE	Production 2006 (mt)	Production 2007 (mt)	Change 2006-2007 (mt)	Change 2006-2007 (%)
Hilmand	2 801	4 399	1 598	57%
Kandahar	405	739	334	83%
Uruzgan	236	411	175	74%
Zabul	113	61	-52	-46%
Day Kundi	148	135	-13	-9%
Southern region	3 703	5 745	2 042	55%

Hilmand

From 2006 to 2007, opium poppy cultivation in Hilmand increased by 48 per cent to a record level of 102,770 ha. Hilmand accounted for 53 per cent of the country's total opium poppy cultivation in 2007, compared to 42 per cent in 2006, 25 per cent in 2005, 23 per cent in 2004 and 19 per cent in 2003.

Information gathered during field work provided clear indications of higher levels of cultivation in the districts of Baghran, Garmser, Kajaki, Musa Qala, Nahri Saraj and Naw Zad, compared to the other districts. However, the total area eradicated was 20 per cent less than in 2006. One of the main reasons for the increase in cultivation was that during the planting season (October and November 2006), AGE encouraged farmers to plant considerably more opium poppy.

Opium production in 2007 increased by 57 per cent to 4,399 metric tons, equivalent to 54 per cent of overall opium production in Afghanistan in 2007.

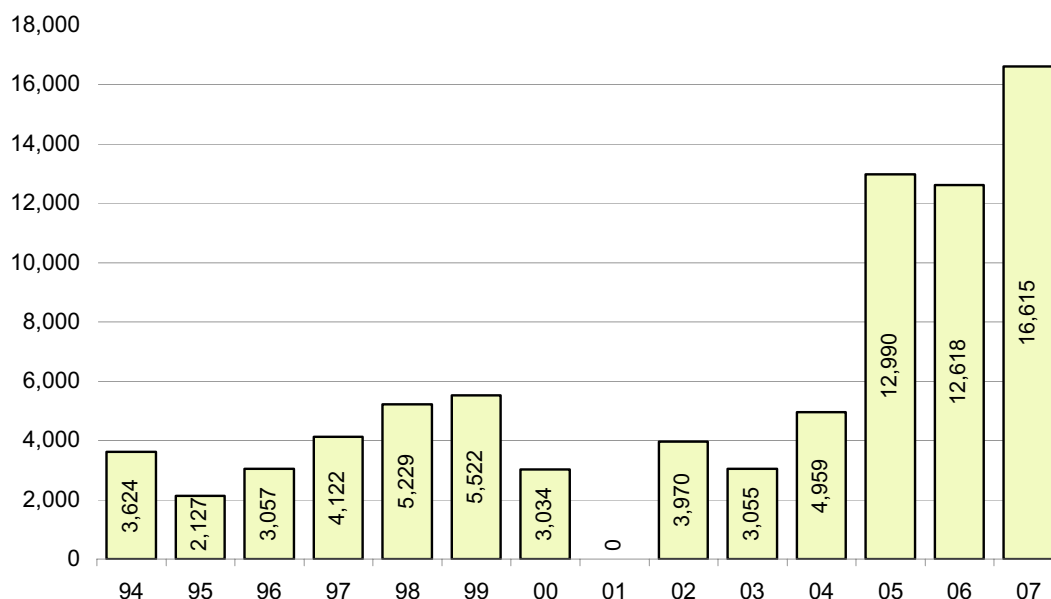
Figure 18: Opium poppy cultivation in Hilmand province (hectares), 1994 – 2007**Kandahar**

In 2007, a total of 16,615 ha of opium poppy was cultivated in Kandahar, which represents an increase of 32 per cent as compared to 2006. This is the highest recorded level of opium poppy cultivation in Kandahar. The main opium poppy cultivation districts in 2007 were Ghorak, Kandahar (Dand), Maiwand, Shah Wali Kot and Zhari.

Opium production increased by 83 per cent to 739 metric tons, which is equivalent to nine per cent of total production in Afghanistan in 2007.

Eradication verified jointly by the Ministry of Counter-Narcotics (MCN) and UNODC jointly verified that a total of 7,905 ha was eradicated in 2007, compared to only 2,829 ha in 2006.

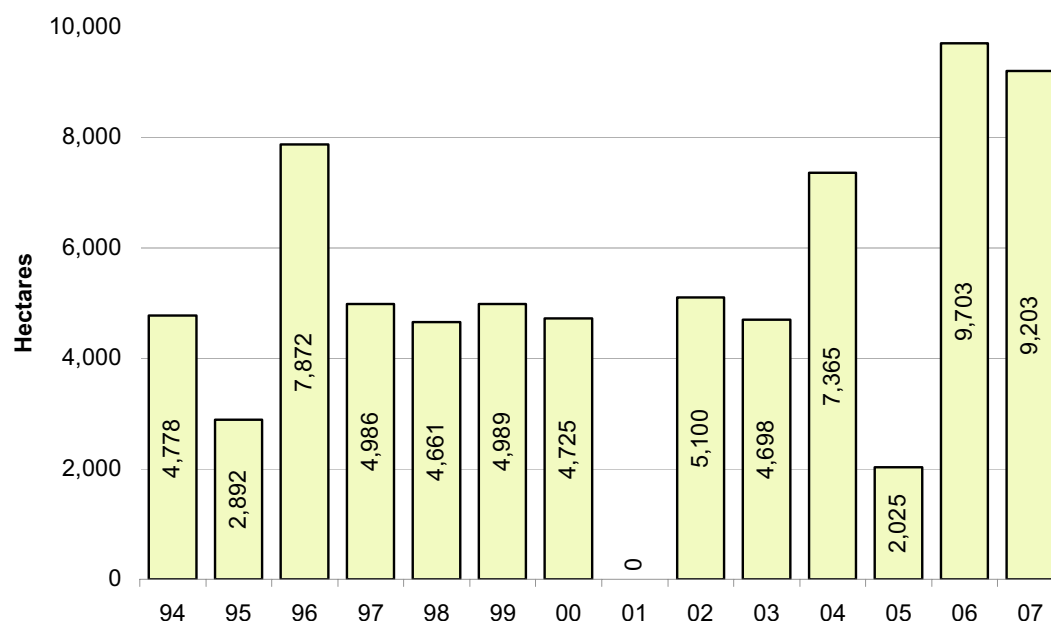
Figure 19: Opium poppy cultivation in Kandahar province (hectares), 1994 – 2007



Uruzgan

Opium poppy cultivation in Uruzgan province decreased slightly (by five per cent) but still accounted for a significant proportion of total cultivation (9,204 ha). The decrease in cultivation was the result of floods in the region immediately before harvesting. Only 204 ha of opium poppy crops were eradicated in this province.

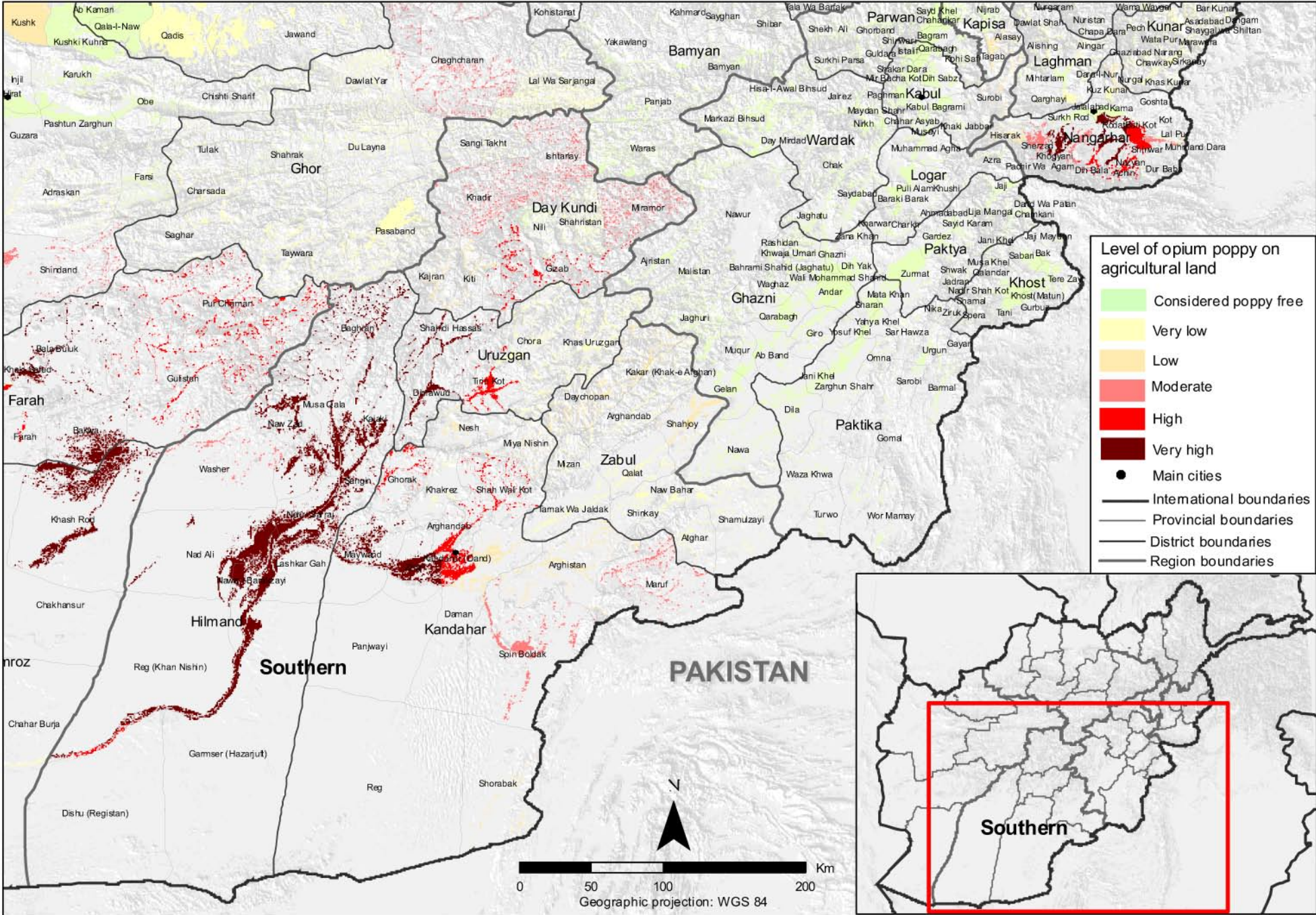
Figure 20: Opium poppy cultivation in Uruzgan province, 1994 – 2007



Day Kundi

Due to cold weather in the northern part of Day Kundi and subsequent crop failure, opium poppy cultivation decreased significantly (by 52 per cent) to 3,346 ha in 2007, compared to 7,044 ha in 2006. Eradication was negligible (5 ha). Security was very poor in most parts of southern Day Kundi in 2007.

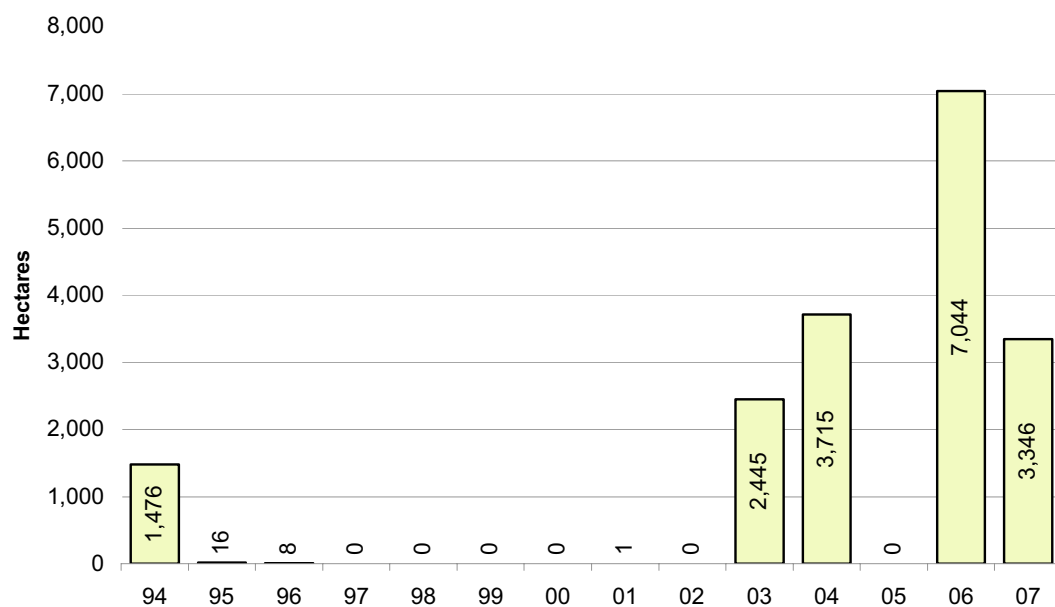
Agricultural land and level of opium poppy cultivation in the Southern region in Afghanistan, 2007



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

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

Figure 21: Opium poppy cultivation in Day Kundi province, 1994 – 2007



Zabul

Climate conditions in Zabul are not favourable for opium poppy cultivation. In 2007, cultivation levels fell to 1,611 ha. Security in the province was poor in 2007.

EASTERN REGION (Kapisa, Kunar, Laghman, Nangarhar, Nuristan)

Opium poppy cultivation in the eastern region increased by 148 per cent in 2007. A total of 20,581 ha of opium poppy was cultivated, which is equivalent to 11 per cent of the total area cultivated in Afghanistan in 2007. Opium production increased by 257 per cent to 1,084 metric tons, equivalent to 13 per cent of total opium production in Afghanistan. Cultivation was high despite significant eradication. The area of opium poppy eradicated was eight times larger than in 2006.

Table 14: Opium poppy cultivation and eradication in the eastern region (hectares), 2004 – 2007

PROVINCE	Cultivation 2004 (ha)	Cultivation 2005 (ha)	Cultivation 2006 (ha)	Cultivation 2007 (ha)	Change 2006-2007 (ha)	Change 2006-2007 (%)	Total area of eradication in 2006 (ha)	Total area eradicated in 2007 (ha)
Nangarhar	28,213	1,093	4,872	18,739	13,867	285%	337	2,339
Kapisa	522	115	282	835	553	196%	0	10
Laghman	2,756	274	710	561	-149	-21%	9	802
Kunar	4,366	1,059	932	446	-486	-52%	44	27
Nuristan	764	1,554	1,516	0	-1,516	-100%	5	0
Eastern Region	36,621	4,095	8,312	20,581	12,269	148%	395	3,178

Table 15: Opium production in the eastern region (metric tons), 2005 – 2007

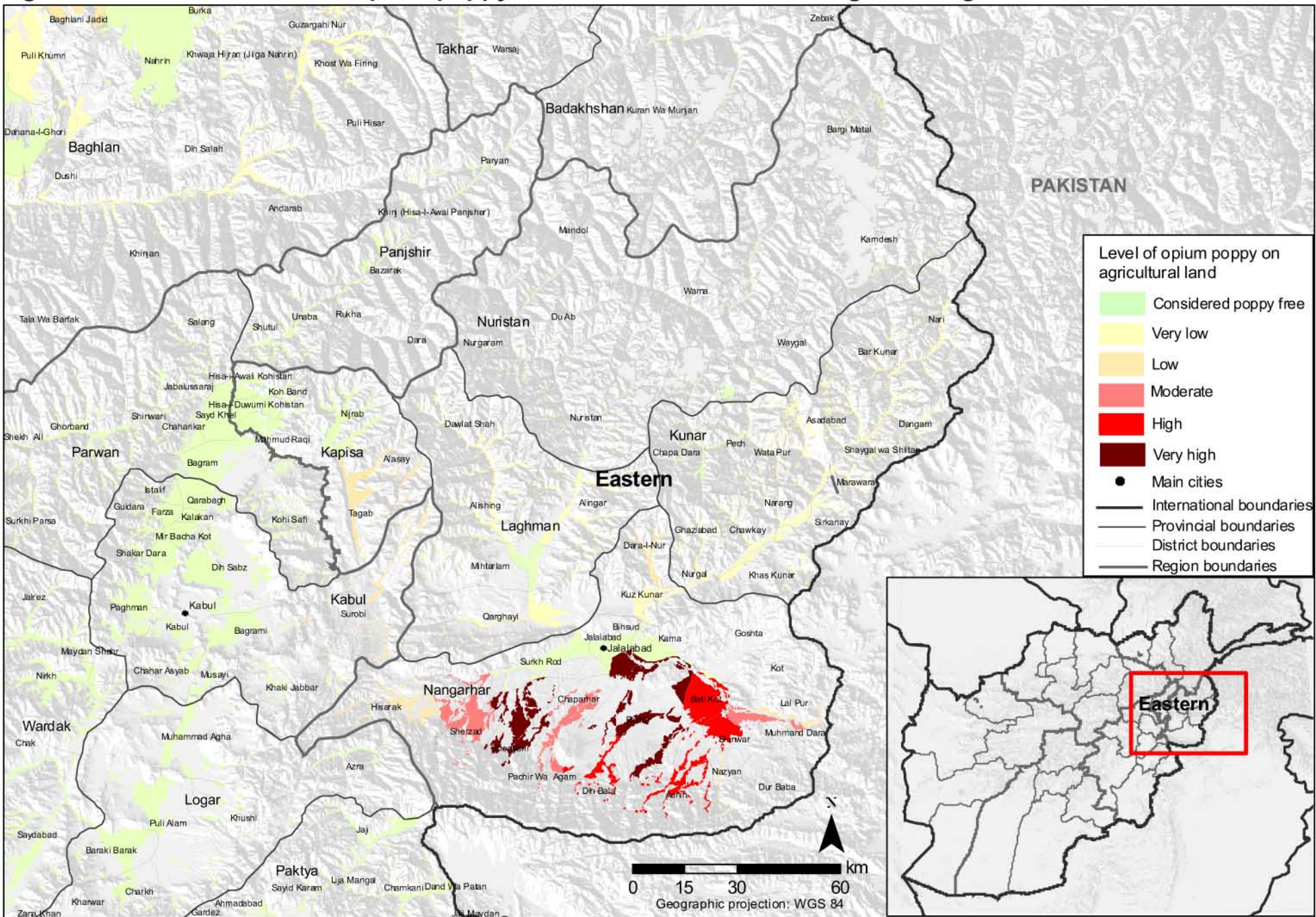
PROVINCE	Production 2006 (mt)	Production 2007 (mt)	Change 2006-2007 (mt)	Change 2006-2007 (%)
Nangarhar	179	1 006	827	462%
Kapisa	10	40	30	303%
Laghman	30	20	-10	-35%
Kunar	44	18	-26	-59%
Nuristan	41	0	-41	-100%
Eastern region	304	1 084	780	257%

Nangarhar

In Nangarhar, opium poppy cultivation increased by 285 per cent (18,739 ha) in 2007 as compared to 2006. Nangarhar has been a traditional opium poppy-growing province for many years. In 2005, however, the province became almost poppy-free as a result of self-restriction by farmers, which led to a 96 per cent decrease as compared to 2004. In 2006, opium poppy cultivation increased but was limited to very remote parts of the province. In 2007, opium poppy cultivation was observed even very close to the provincial centre Jalalabad. An important factor contributing to this development was that two important tribes in Nangarhar did not comply with the Government's opium poppy cultivation ban; as a result, cultivation increased sharply in the southern part of the province. Opium poppy cultivation in the northern part of the province is still very limited.

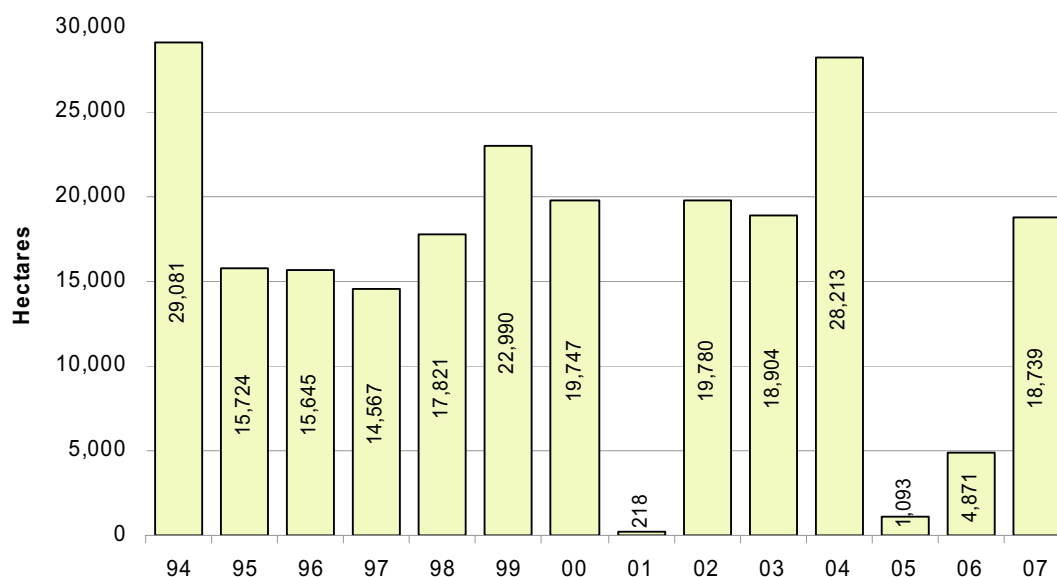
Opium production increased by 462 per cent to reach 1,006 metric tons in 2007. The total area of crops eradicated was estimated at 2,339 ha, compared to only 337 ha in 2006.

Agricultural land and level of opium poppy cultivation in the Eastern region in Afghanistan, 2007

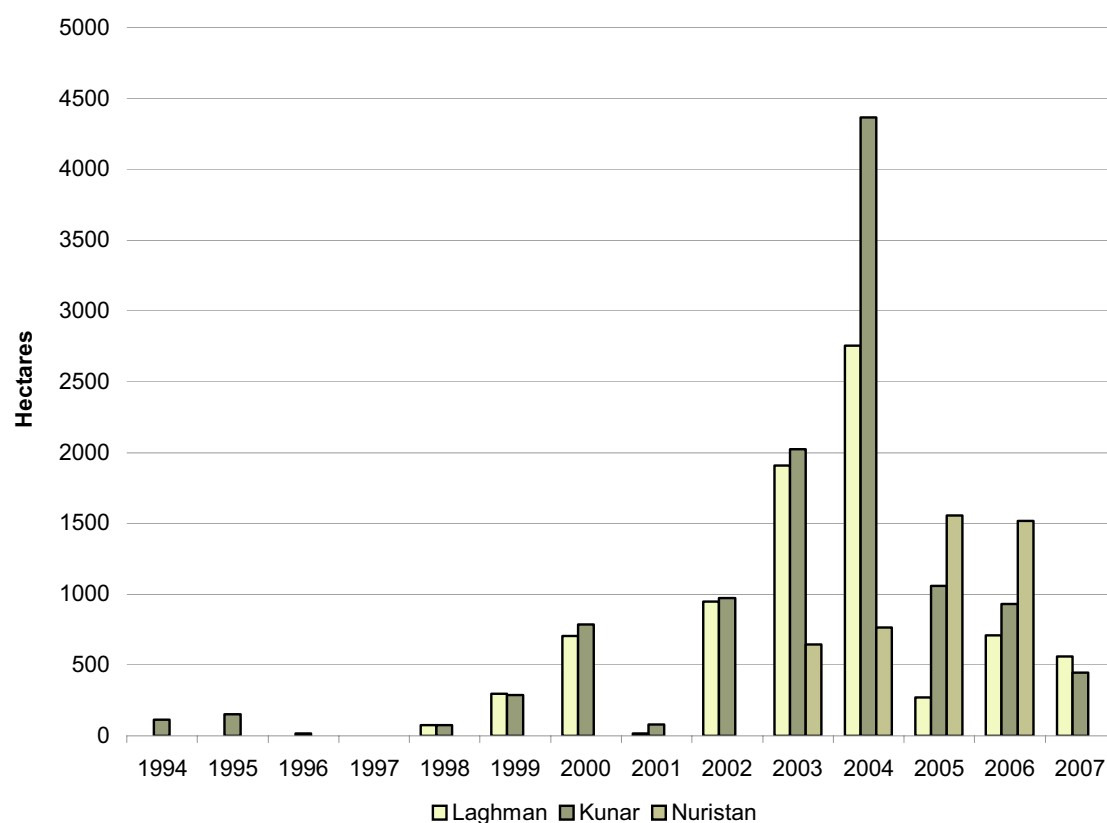


Source: Government of Afghanistan - National monitoring system implemented by UNODC

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

Figure 22: Opium poppy cultivation in Nangarhar province (hectares), 1994 – 2007**Laghman, Kunar, Nuristan**

Opium poppy cultivation in Laghman decreased by 21 per cent to reach 561 ha, which is much lower than the 2004 level of 2,756 ha. Cultivation decreased in Kunar by 52 per cent (446 ha), while Nuristan was poppy-free in 2007. Opium poppy cultivation in all three provinces is concentrated in remote and mountainous areas where security is poor.

Figure 23: Opium poppy cultivation in Lagman, Kunar and Nuristan provinces (hectares), 1994 – 2007**NORTH-EAST REGION** (Badakhshan, Takhar)

Opium poppy cultivation in the north-east reached its lowest level ever recorded due to successful pre-cultivation campaigns and effective eradication. A total area of 4,853 ha of opium poppy was cultivated in 2007, compared to 15,234 ha in 2006, which represents a decrease of 68 per cent. Opium production also decreased by 67 per cent to 195 metric tons in 2007, compared to 590 metric tons in 2006.

Table 16: Opium poppy cultivation and eradication in the north-eastern region (hectares), 2004 – 2007

PROVINCE	Cultivation 2004 (ha)	Cultivation 2005 (ha)	Cultivation 2006 (ha)	Cultivation 2007 (ha)	Change 2006-2007 (ha)	Change 2006-2007 (%)	Total area of eradication in 2006 (ha)	Total area eradicated in 2007 (ha)
Badakhshan	15,607	7,370	13,056	3,642	-9,414	-72%	921	1,311
Takhar	762	1,364	2,178	1,211	-967	-44%	35	781
Kunduz	224	275	102	0	-102	-100%	0	5
North-Eastern Region	16,593	9,009	15,336	4,853	-10,483	-68%	956	2,097

Table 17: Opium production in the north-eastern region (metric tons), 2006 – 2007

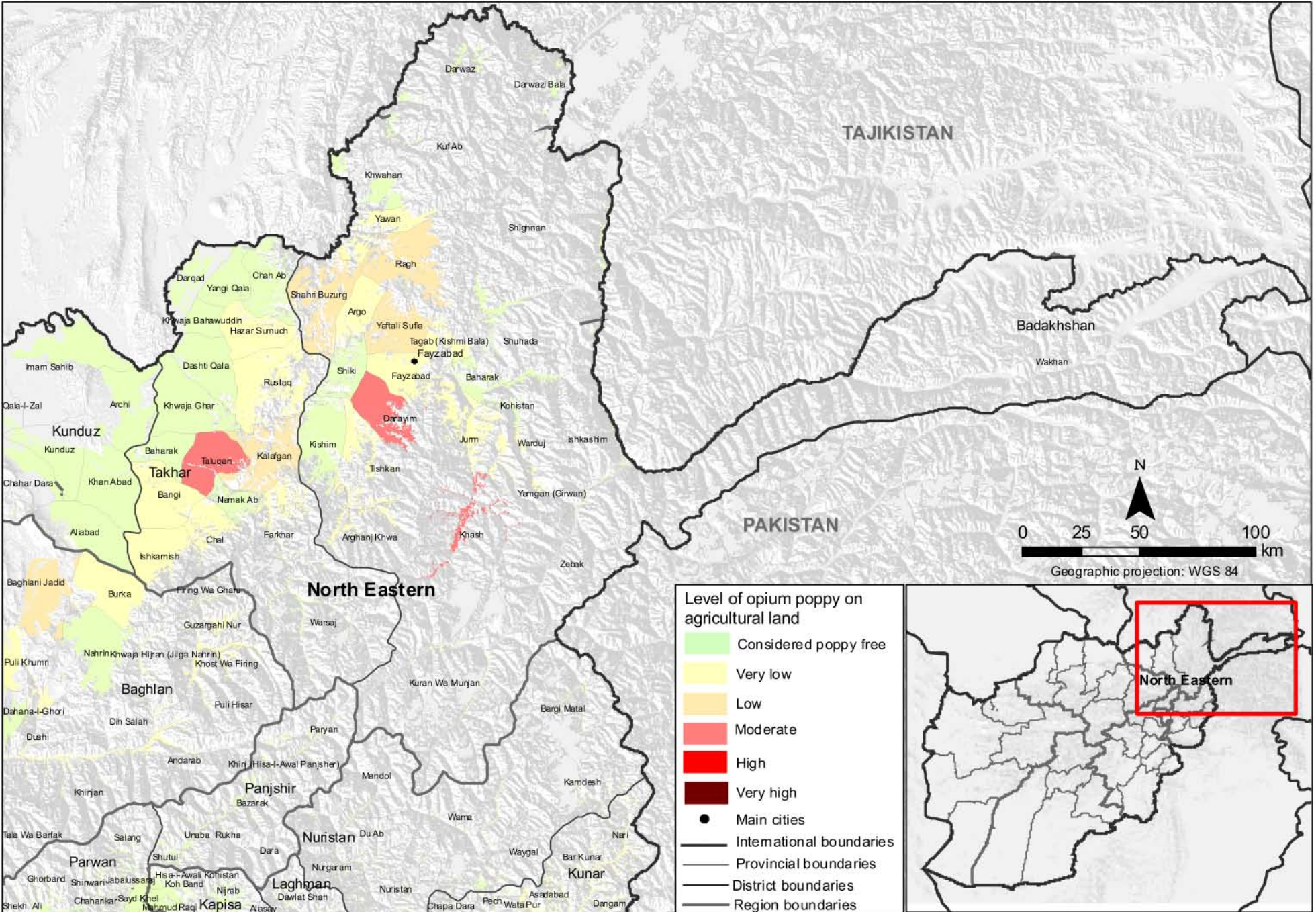
PROVINCE	Production 2006 (mt)	Production 2007 (mt)	Change 2006-2007 (mt)	Change 2006-2007 (%)
Badakhshan	503	152	-351	-70%
Takhar	87	43	-44	-50%
Kunduz	4	0	-4	-100%
North-eastern region	594	195	-399	-67%

Badakhshan

In 2007, opium poppy cultivation in Badakhshan decreased by 72 per cent to 3,642 ha, compared to 13,056 ha in 2006. Cultivation was confined chiefly to rain-fed areas and side-valleys in 2007, as also observed in 2005 and 2006. There was some cultivation in irrigated valleys, but those crops were eradicated in the early stage of growth in most areas in November and December 2006. Approximately 87 per cent of opium poppy crops were cultivated in rain-fed areas in 2007, compared to 60 per cent in 2006. The Khash and Darayeem valleys were the main opium poppy cultivation areas in 2007.

The decrease in cultivation was partly attributable to effective pre-cultivation and eradication campaigns and irregular rainfall in rain-fed areas. Opium yield in Badakhshan was lower than the national average, resulting in a significant decrease in production (by 351 per cent) in 2007. Eradication was more intensive in 2007: 2,097 ha were eradicated, compared to 956 ha in 2006.

Agricultural land and level of opium poppy cultivation in the North Eastern region in Afghanistan, 2007



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

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

Figure 24: Opium poppy cultivation in Badakhshan province (hectares), 1994 – 2007

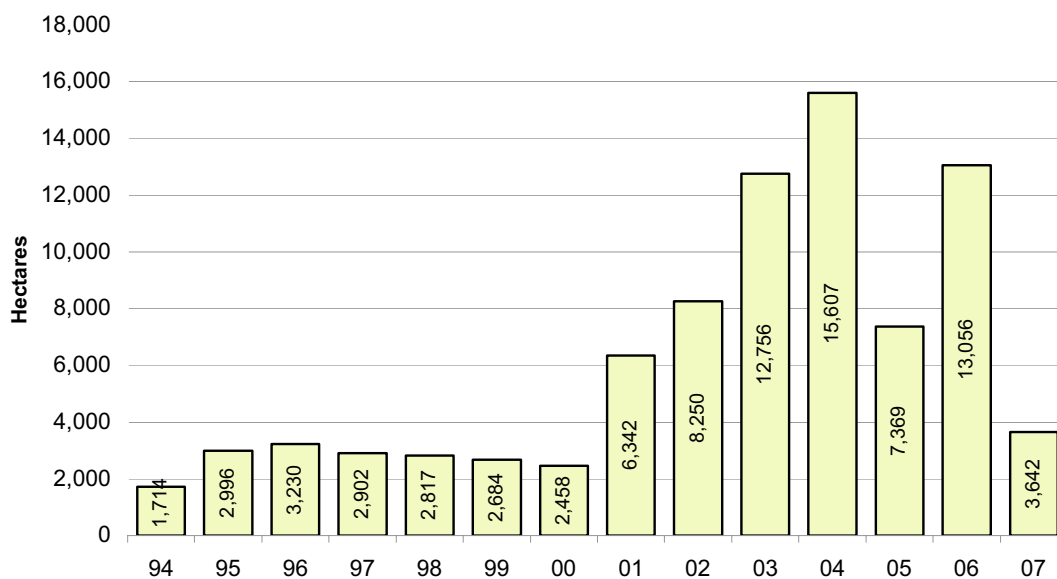
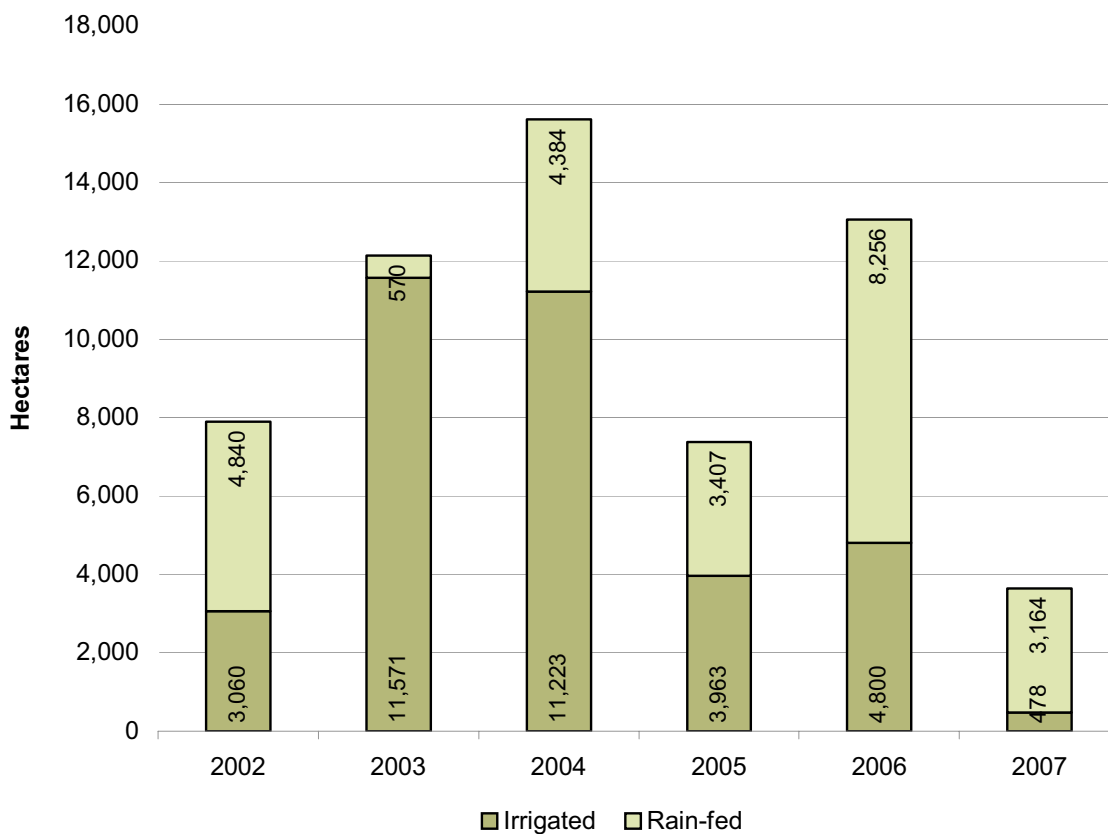


Figure 25: Distribution of irrigated and rain-fed opium poppy cultivation in Badakhshan (ha), 2002 – 2007



Takhar

In 2007, overall opium poppy cultivation in Takhar decreased by 42 per cent to 1,211 ha, compared to 2,178 ha in 2006. A total of 781 ha of opium poppy crops was eradicated.

Kunduz

Kunduz was poppy-free in 2007.

NORTHERN REGION (Baghlan, Balkh, Bamyan, Faryab, Jawzjan, Samangan, Sari Pul)

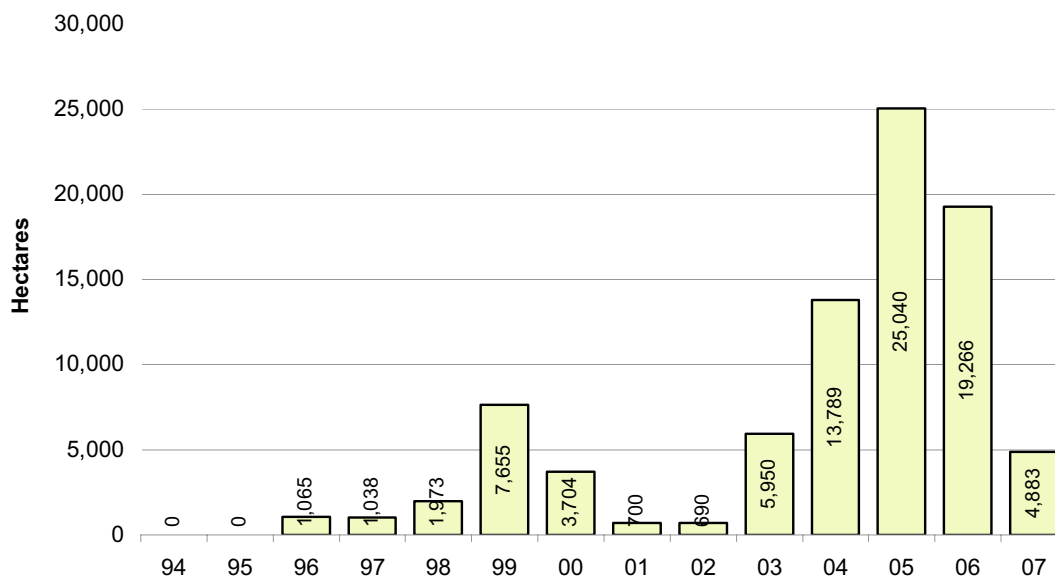
The total area under opium poppy cultivation in the northern region decreased from 19,267 ha in 2006 to 4,882 ha in 2007, i.e., a decrease of 75 per cent. In 2006, opium cultivation in the region had fallen for the first time in five years. In 2007, three provinces (Balkh, Bamyan and Samangan) became poppy-free for the first time. Opium production also fell sharply, by 73 per cent to 233 metric tons, accounting for only 2.8 per cent of total opium production in Afghanistan in 2007. That decrease was attributable chiefly to an effective pre-cultivation campaign, as the result of which in many provinces opium poppy was not cultivated. An area of 772 ha of opium poppy was eradicated in the region in 2007.

Table 18: Opium poppy cultivation and eradication in the northern region (hectares), 2004 – 2007

PROVINCE	Cultivation 2004 (ha)	Cultivation 2005 (ha)	Cultivation 2006 (ha)	Cultivation 2007 (ha)	Change 2006-2007 (ha)	Change 2006-2007 (%)	Total area of eradication in 2006 (ha)	Total area eradicated in 2007 (ha)
Faryab	3,249	2,665	3,040	2,866	-174	-6%	264	337
Jawzjan	1,673	1,748	2,024	1,085	-939	-46%	48	122
Baghlan	2,444	2,563	2,742	671	-2,071	-76%	22	185
Sari Pul	1,974	3,227	2,252	260	-1,992	-88%	1,981	114
Balkh	2,495	10,837	7,232	0	-7,232	-100%	2,370	14
Bamyan	803	126	17	0	-17	-100%	0	0
Samangan	1,151	3,874	1,960	0	-1,960	-100%	136	0
Northern Region	13,789	25,040	19,267	4,882	-14,385	-75%	4,821	772

Table 19: Opium production in the northern region (metric tons), 2005 – 2007

PROVINCE	Production 2006 (mt)	Production 2007 (mt)	Change 2006-2007 (mt)	Change 2006-2007 (%)
Faryab	162	135	-27	-17%
Jawzjan	92	54	-38	-41%
Baghlan	134	36	-98	-73%
Sari Pul	106	9	-97	-92%
Balkh	291	0	-291	-100%
Bamyan	0	0	0	0%
Samangan	81	0	-81	-100%
Northern region	866	233	-633	-73%

Figure 26: Opium poppy cultivation in the northern region (hectares), 1994 – 2007**Balkh**

Balkh was found to be poppy-free in 2007. Crops cultivated in a small area of the Chimtal and Sholgara districts were eradicated. This success was attributed to a Governor-led pre-cultivation campaign. Opium poppy cultivation was introduced in the province in 1996 (1,065 ha), but Balkh was not a major producer of opium until 2004. A high level of cultivation (10,837 ha) was recorded in 2005, and again in 2006 (7,232 ha).

Faryab

Levels of opium poppy cultivation in Faryab stabilized at around 3,000 ha after 2002. Cultivation decreased slightly from 3,040 ha in 2006 to 2,866 ha in 2007 (a decrease of six per cent) following the eradication of 337 ha of opium poppy. The security situation in Faryab was poor, particularly in Qaysar, Pashtun Kot and Bilchiragh, as a result of clashes between local commanders.

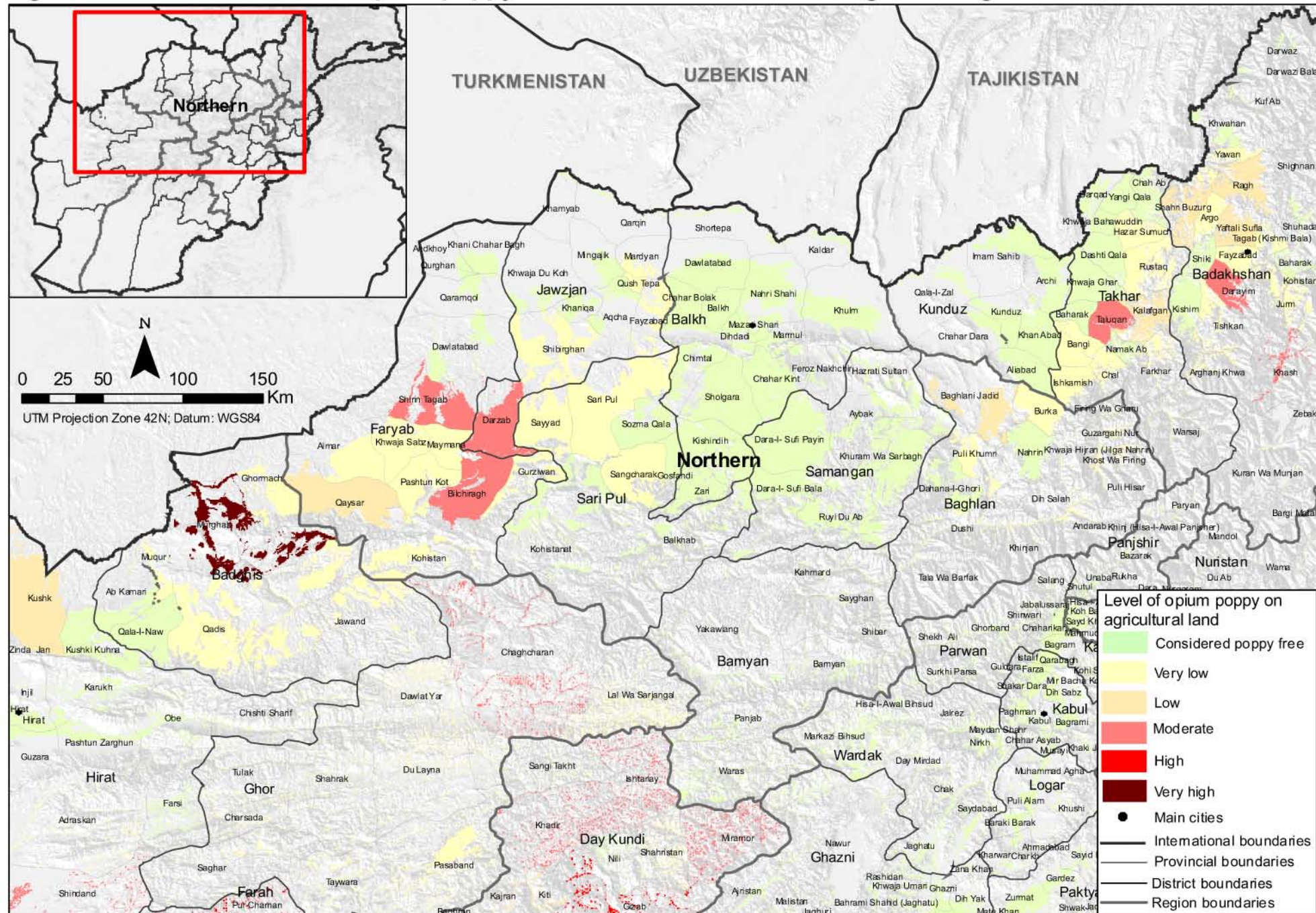
Samangan, Bamyan and Sari Pul

Samangan and Bamyan were found to be poppy-free. Cultivation in Bamyan has been negligible in the past. In Samangan province, opium poppy cultivation has ranged from 1,000 to 4,000 ha since 2004. The poppy-free status of Samangan in 2007 is a good achievement considering that it was the result of non-cultivation of opium poppy. There was no eradication in Samangan in 2007. Opium poppy cultivation in Saripul fell by 88 per cent to 260 ha, compared to 2,252 ha in 2006, thus bringing the province very close to achieving poppy-free status.

Jawzjan and Baghlan

Cultivation in both provinces is not substantial, ranging from 1,500 to 3,000 ha since 2004. Cultivation in Jawzjan decreased by 46 per cent compared to 2006, partly as the result of the eradication of 122 ha of opium poppy.

Agricultural land and level of opium poppy cultivation in the Northern region in Afghanistan, 2007



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

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

CENTRAL REGION (Ghazni, Kabul, Khost, Logar, Paktika, Paktya, Parwan, Wardak)

Although opium poppy cultivation increased by 48 per cent in 2007, the total area cultivated remained negligible (500 ha) and was limited to the Surobi district of Kabul province. There was limited cultivation in the Kabul, Khost and Parwan provinces, where 31 hectares were eradicated. With the exception of Kabul, all provinces were poppy-free by the end of the survey.

Table 20: Opium poppy cultivation and eradication in the central region (hectares), 2004 – 2007 (MR: column Change 2006-2007 % format)

PROVINCE	Cultivation 2004 (ha)	Cultivation 2005 (ha)	Cultivation 2006 (ha)	Cultivation 2007 (ha)	Change 2006-2007 (ha)	Change 2006-2007 (%)	Total area of eradication in 2006 (ha)	Total area eradicated in 2007 (ha)
Kabul	282	0	80	500	420	525%	0	14
Khost	838	0	133	0	-133	-100%	0	16
Logar	24	0	0	0	0	0%	0	0
Paktya	1,200	0	0	0	0	0%	0	0
Panjshir	0	0	0	0	0	0%	0	0
Parwan	1,310	0	124	0	-124	-100%	0	1
Wardak	1,017	106	0	0	0	0%	0	0
Ghazni	62	0	0	0	0	0%	0	0
Paktika	0	0	0	0	0	0%	0	0
Central Region	4,733	106	337	500	163	48%	0	31

Table 21: Opium production in the central region (metric tons), 2005 – 2007

PROVINCE	Production 2006 (mt)	Production 2007 (mt)	Change 2006-2007 (mt)	Change 2006-2007 (%)
Kabul	2	26	24	1,198%
Khost	3	0	-3	-100%
Logar	0	0	0	0%
Paktya	0	0	0	0%
Panjshir	0	0	0	0%
Parwan	3	0	-3	-100%
Wardak	0	0	0	0%
Ghazni	0	0	0	0%
Paktika	0	0	0	0%
Central region	8	26	18	224%

WESTERN REGION (Farah, Ghor, Hirat, Nimroz and Badghis)

Opium poppy cultivation increased by 44 per cent (to 28,619 ha) compared to 19,820 ha in 2006. This was attributed to a sharp increase in the area under opium poppy cultivation in Farah and Nimroz provinces. A much smaller area was eradicated in 2007 (668 ha) than in 2006 (1,303 ha) due to unfavorable security conditions.

Table 22: Opium poppy cultivation and eradication in the western region (hectares), 2004 – 2007

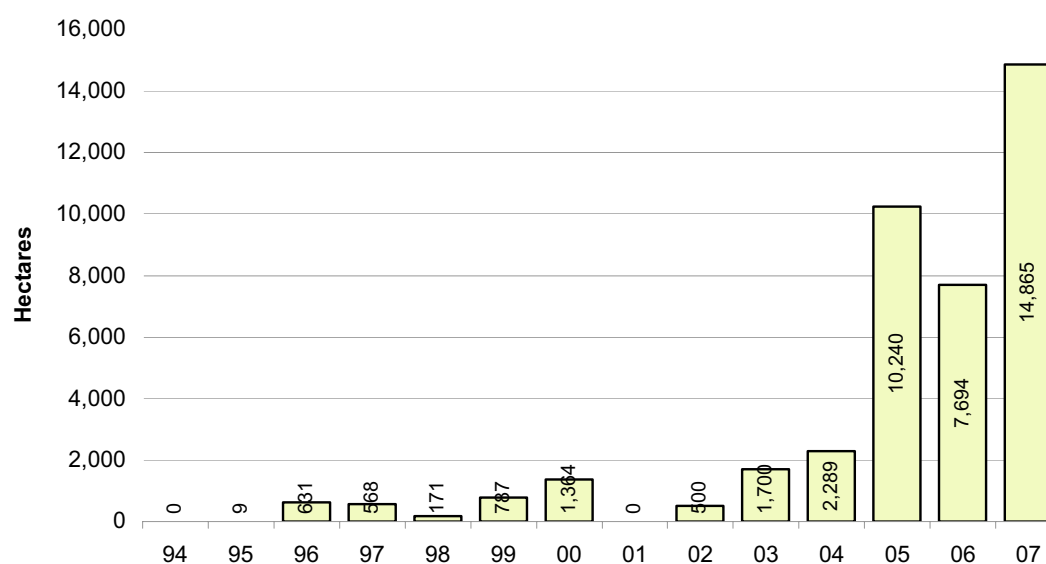
PROVINCE	Cultivation 2004 (ha)	Cultivation 2005 (ha)	Cultivation 2006 (ha)	Cultivation 2007 (ha)	Change 2006-2007 (ha)	Change 2006-2007 (%)	Total area of eradication in 2006 (ha)	Total area eradicated in 2007 (ha)
Farah	2,288	10,240	7,694	14,865	7,171	93%	562	143
Nimroz	115	1,690	1,955	6,507	4,552	233%	26	35
Badghis	614	2,967	3,205	4,219	1,014	32%	602	232
Hirat	2,531	1,924	2,287	1,525	-762	-33%	113	70
Ghor	4,983	2,689	4,679	1,503	-3,176	-68%	0	188
Western Region	10,531	19,510	19,820	28,619	8,799	44%	1,303	668

Table 23: Opium production in the western region (metric tons), 2006 – 2007

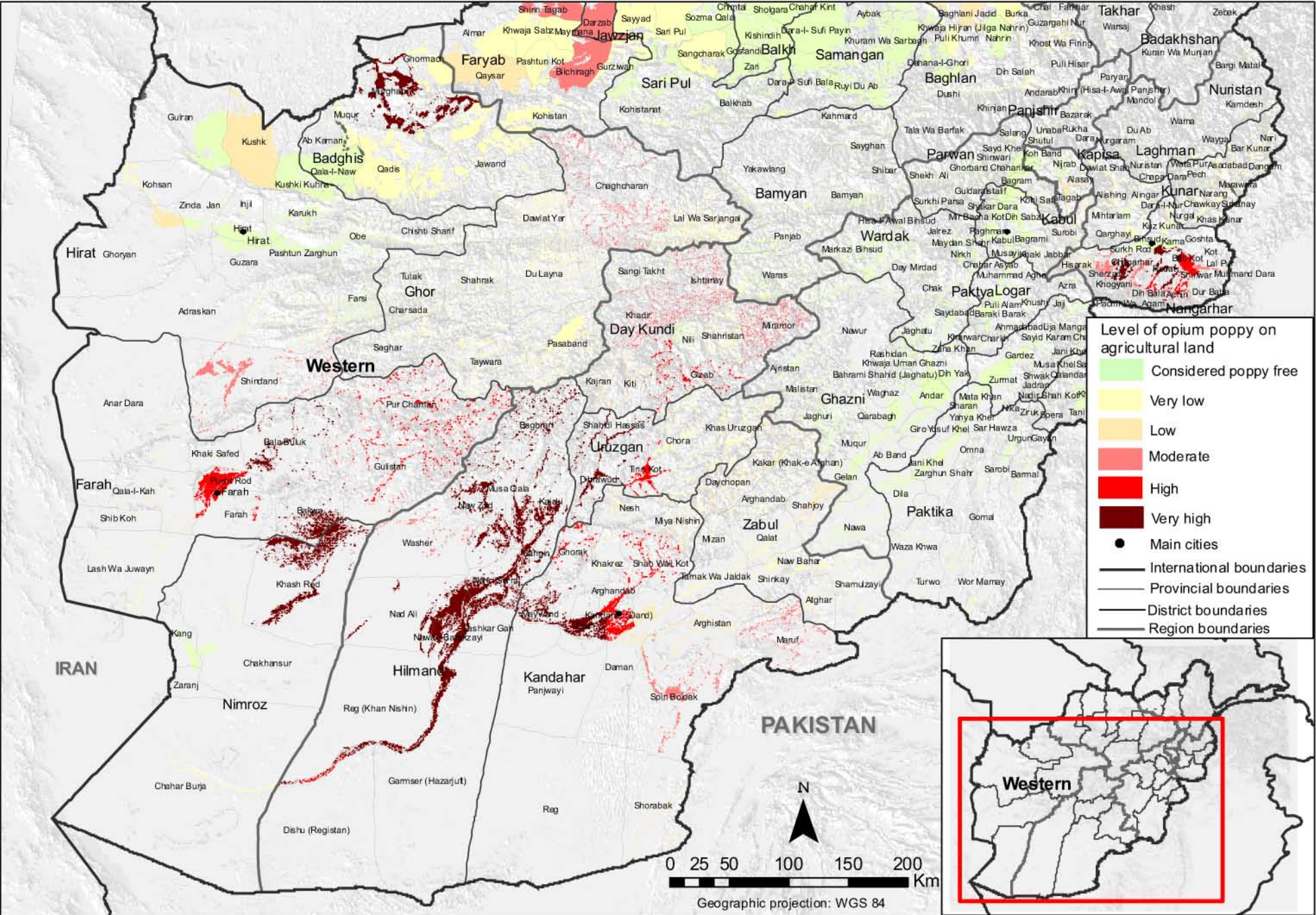
PROVINCE	Production 2006 (mt)	Production 2007 (mt)	Change 2006-2007 (mt)	Change 2006-2007 (%)
Farah	297	409	112	38%
Nimroz	71	372	301	424%
Badghis	73	100	27	37%
Ghor	115	44	-71	-62%
Hirat	54	33	-21	-38%
Western region	610	959	349	57%

Farah

Opium poppy cultivation in Farah almost doubled from 7,694 ha in 2006 to 15,865 ha in 2007, an increase of 93 per cent. As a result, opium production in the province increased by 38 per cent to 112 metric tons. Only 143 ha of opium poppy were eradicated in Farah province in 2007.

Figure 27: Opium poppy cultivation in Farah province (hectares), 1994 – 2007

Agricultural land and level of opium poppy cultivation in the Western region in Afghanistan, 2007



Source: MCN - UNODC Afghanistan Opium Survey 2006

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

Nimroz

Opium poppy cultivation in Nimroz province increased threefold compared to 2006, reaching 6,507 ha in 2007. Opium poppy crops were cultivated chiefly in the Khash Rod district. Many new agricultural areas were identified in the northern part of this district in 2006 and 2007, the vast majority of which were used for opium poppy cultivation. Only 43 ha of opium poppy were eradicated in Nimroz in 2007. In 2004, the total area under opium poppy cultivation in this province was only 115 ha.

Hirat and Ghor

Opium poppy cultivation decreased by 33 per cent in Hirat (1,525 ha) and 68 per cent in Ghor (1,955 ha) in 2007. Cultivation in Hirat took place mainly in the Ghoryan, Khusk and Shindad districts.

Badghish

Badghish is becoming an important opium producing province; opium poppy cultivation has increased significantly since 2002, and reached 4,219 ha in 2007, compared to 3,205 ha in 2006 (an increase of 32 per cent). A total of 232 ha was eradicated by local Governor-led forces, compared to 602 ha in 2006.

2.2 Opium poppy cultivation density

The area of land potentially available for crop cultivation in Afghanistan is 8.05 million hectares¹¹, of a total land area of 65 million hectares. The Afghan Ministry of Agriculture estimates the land actually under cultivation at around 4.55 million ha¹². Based on these data, the area under opium poppy cultivation in 2007 covered 4.2 per cent of the total area of land used for agriculture, an increase from 3.65 per cent in 2006 and 2.3 per cent in 2005.

Opium poppy cultivation density with respect to potential agricultural land (cultivated and currently fallow land) varies considerably from province to province. In 2007, it was highest in Hilmand, the main opium-producing province, where one third of potential agricultural land (36 per cent) was under opium poppy cultivation. Opium poppy cultivation density was also relatively high in the provinces of Nangarhar (17 per cent), Farah (17 per cent), Uruzgan (13 per cent), Kandahar (10 per cent) and Nimroz (10 per cent), while in the northern regions only 0.3 per cent of agricultural land was covered by opium poppy.

2.3 Cannabis cultivation

UNODC surveyors collected information on cannabis cultivation through direct observation and interviews with district and village elders during the annual opium survey. The socio-economic data collected from 1,500 villages and interviews with 4,500 farmers also gives an indication of cannabis cultivation trends. This information must be treated with caution, since the survey was not designed to verify the extent of cannabis cultivation. A separate survey would have to be carried out during the cannabis cultivation period (June-September) in order to obtain more detailed information on the level of cannabis cultivation in Afghanistan.

The increase in cannabis cultivation observed in Afghanistan gives cause for concern. It is estimated that cannabis cultivation increased to 70,000 ha in 2007. In 2006, an estimated 50,000 ha of cannabis were cultivated in Afghanistan.

² <http://faostat.fao.org/faostat/collections?version=ext&hasbulk=0&subset=agriculture>

³ <http://www.agriculture.gov.af/agriculture.htm>. This figure is for 2006. The figure for 2007 was not available.



Cannabis cultivation in Balkh province

Cannabis is cultivated on a large scale in Paktia province. Cannabis cultivation has also spread to the north of Afghanistan, and is observed to have increased particularly in Balkh province. Below table lists the districts where cannabis cultivation was noticed.

Table 24: Districts where cannabis cultivation was observed

Region	Province	Districts in which cannabis cultivation has been observed
Eastern	Nangarhar	Hisarak, Sherzad, Khogyani, Pachir Wa Agam, Dehbala, Achin
Northern	Sari Pul	Sari Pul, Sayed Abad
	Jawzjan	Faizabad, Darzab, Qush Tepa
	Balkh	Balkh, Chahar Bolak, Chintal
	Faryab	Qaysar, Pashtun Kot
	Baghlan	Puli Khumri, Tala wa barfak
Central	Paktya	Sayid Karam, Gardez, Ahmadabad, Jaji, Chamkani
	Khost	Jaji Maydan
Southern	Kandahar	Panjwayi, Dand, Khakrez, Maiwand, Ghorak, Arghandab, Zhari, Shah Wali Kot
	Hilmand	Nahri Sarraj, Nawa-i-Barakkzayi, Lashkar Gah, Nad Ali, Musa Qala, Kajaki, Sangin, Nawzad, Garmser, Washer, Baghran, Dishu
Western	Farah	Farah, Gulistan, Pusht Rod
	Nimroz	Chahar Butja, Khash Rod
	Herat	Shindand, Guzara, Ghoryan
	Badghis	Murghab, Ghormach, Qadis
	Ghor	Taywara
North-eastern	Badakhshan	Jurm, Baharak
	Takhar	Ishkamish, Baharak, Toluqan
	Kunduz	Khan Abad, Imam Sahib, Qala-I- Zal

Cannabis prices have been increasing in the last two years, and in June 2007 ranged between US\$ 48 per kilogram and US\$ 61/kg, averaging at US\$ 53/kg. Taking into account that cannabis yields around twice the quantity of drug per hectare compared to opium poppy and requires lower investments for cultivation, cannabis farmers may earn the same amount per hectare as opium farmers or more. As a consequence, farmers who do not cultivate opium poppy may turn to cannabis cultivation. Likely reasons for the increase in cannabis cultivation are the absence of eradication campaigns targeting cannabis, good marketability of cannabis resin, and the ease of processing cannabis locally.

2.4 Opium yield

Weather conditions in 2007 were ideal for opium poppy, resulting in the best opium yield of the last five years. In 2007, the average dry opium yield in Afghanistan, weighted by cultivation area, was estimated at 42.5 kg/ha (confidence interval: 41.5-43.5 kg/ha). The average yield was much higher than in 2006 (37 kg/ha) due to extremely good weather conditions and the fact that opium poppy crops were not affected by disease. The largest decreases were found in the western region (28.8 kg/ha), where farmers reported losses due to drought.

The results of the yield survey were confirmed by the village survey (1,500 villages visited), which found similar yield figures based on farmer reports.

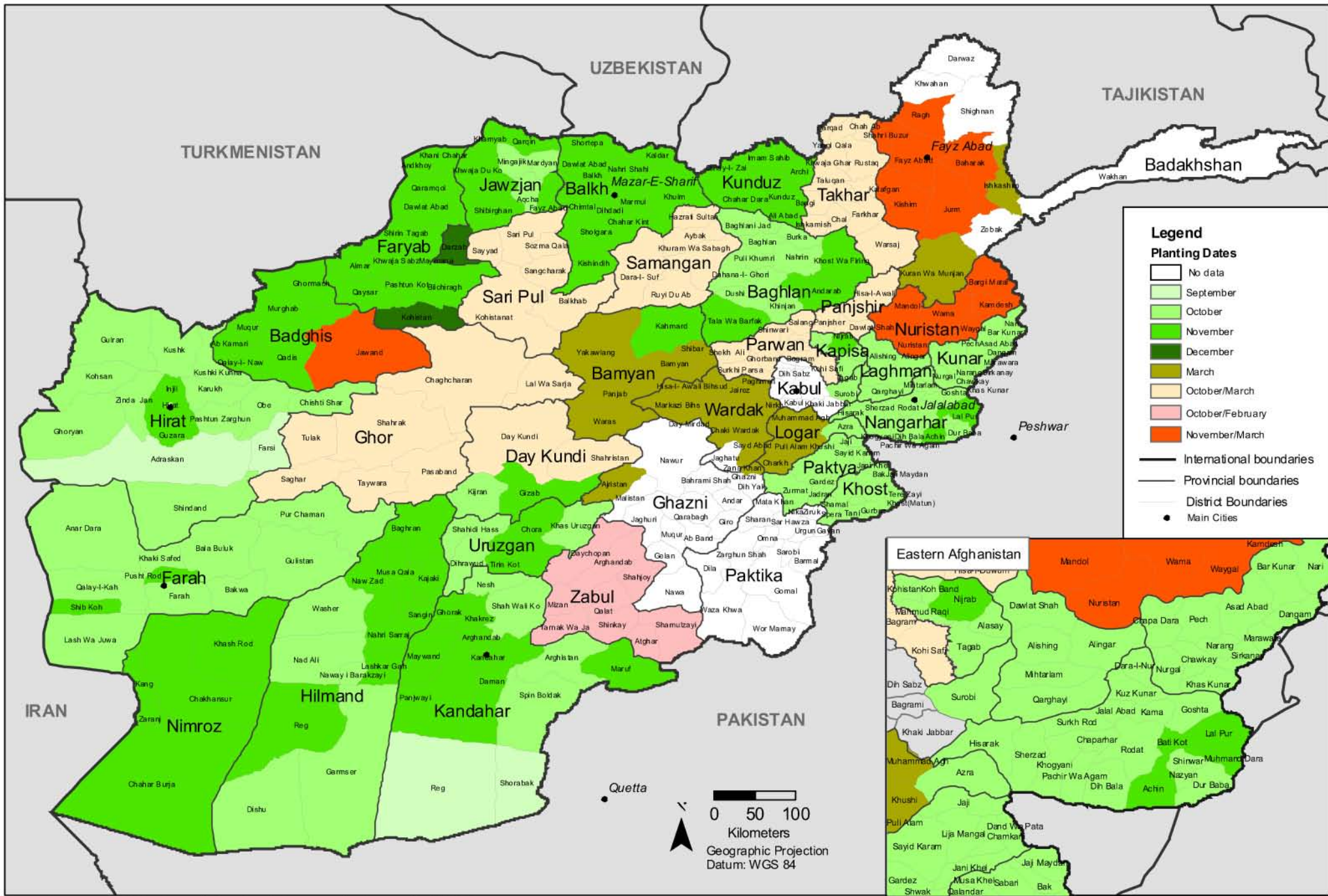
Table 25: Opium yield by region in 2006 and 2007(kg/ha)

Region	Average yield in 2006 (kg/ha)	Average yield in 2007 (kg/ha)	Change
Central (Parwan, Paktya, Wardak, Khost, Kabul, Logar, Ghazni, Paktika, Panjshir)*	23.3	51.9	123%
Eastern (Nangarhar, Kunar, Laghman, Nuristan, Kapisa)	36.6	45.2	23%
North-eastern (Badakhshan, Takhar, Kunduz)	38.7	40.7	5%
Northern (Bamyan, Jawzjan, Sari Pul, Baghlan, Faryab, Balkh, Samangan)	41.8	49.7	19%
Southern (Hilmand, Uruzgan, Kandahar, Zabul, Day Kundi)	36.3	42.2	16%
Western (Ghor, Hirat, Farah, Nimroz, Badghis)	32.3	28.8	-11%
Weighted national average	37.0	42.5	15%

* In 2007, yield measurements were taken only in Kabul province as all other provinces were opium poppy-free.

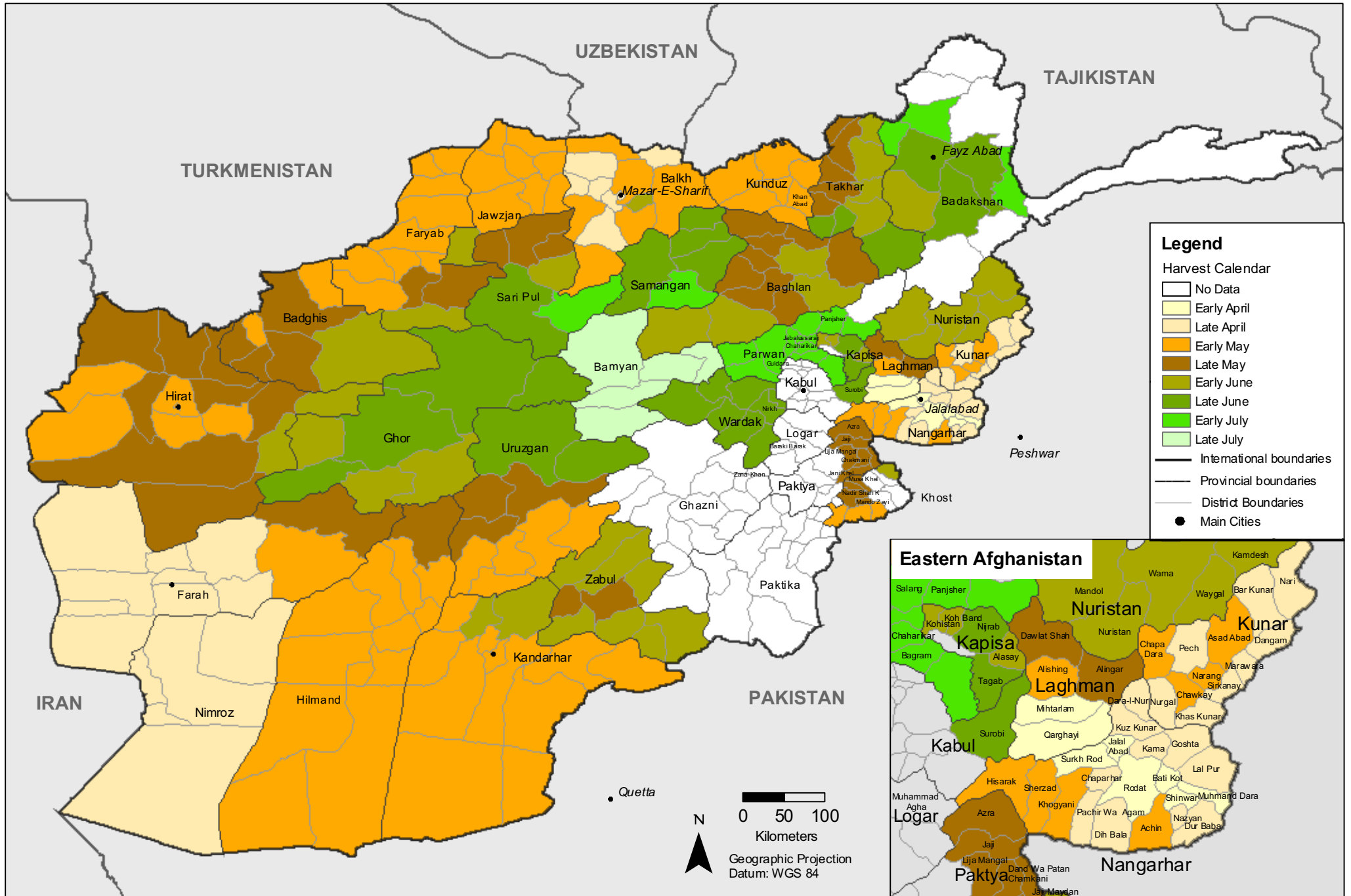
A total of 17,420 opium poppy capsules were measured in the 185 villages visited. Surveyors selected three opium poppy fields in each sample village visited: one field of poor quality, one of medium quality and one of good quality, instead of only one field per village as in previous surveys. This measure helped to avoid any possible tendency on the part of the surveyors to select fields of a certain quality, and improved the sample distribution. It should be noted that "field quality" here refers to the relative quality of a field compared to other fields in a village, not to any absolute, quantifiable quality.

Afghanistan, Opium poppy planting calendar in 2006/2007



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

Afghanistan: Opium poppy harvest time in 2007



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

Lancing

Lancing is the incision of opium capsules during harvest using a sharp instrument, causing the opium latex to ooze out of the capsule. The number of lancing of opium poppy capsules was minimal (three times) in Badakhshan, Badghis, Ghor, Hirat and Takhar. At the country level in 2007, lancing was carried out four times on average, as in 2006. The highest number of lancing (six times) was observed in the provinces of Kabul, Kunar, and Laghman.

Table 26: Average number of opium poppy capsule lancing in 2007

Province	Average number of lancing
Badakhshan	3
Badghis	3
Baghlan	4
Day Kundi	4
Farah	4
Faryab	4
Ghor	3
Hilmand	5
Hirat	3
Kabul	6
Kandahar	4
Kapisa	5
Kunar	6
Laghman	6
Nangarhar	5
Nimroz	4
Nuristan	4
Sari Pul	4
Takhar	3
Uruzgan	5
Zabul	4
Overall	4

Harvest conditions

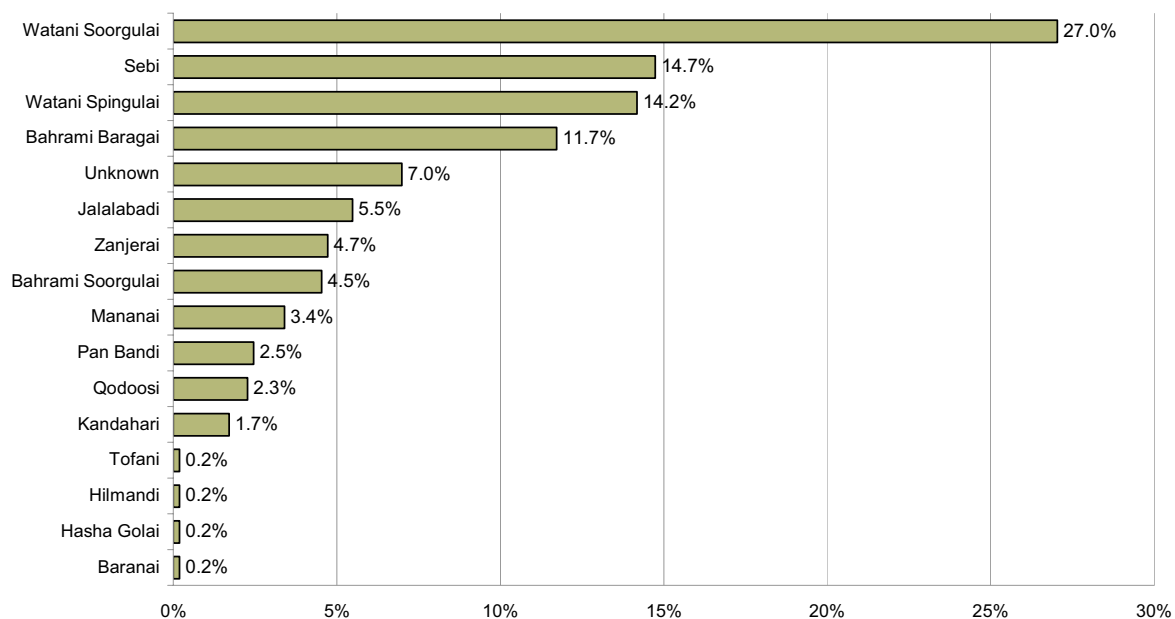
During harvest time, farmers in southern and northern Afghanistan reported a shortage of agricultural labourers available for the lancing of opium poppy capsules and also rushed harvesting due to fear of eradication. In the western, north-eastern and eastern regions, farmers did not report any problems during harvest time.

Opium poppy varieties

During the yield survey, information was collected in 185 villages on opium poppy varieties planted by the farmers. Different varieties can vary in many aspects, such as appropriate soils, maturation date, resistance to disease, need for inputs such as water and fertilizer and labour requirements. During the yield survey in 2007, the same number of opium poppy varieties were found as in 2006. The variety preferred by most farmers (27 per cent) remained *Watani Soorgulai*; however, the proportion of that variety was much lower than in 2006 (42 per cent). The second most common variety (14.7 per cent) planted in 2007 was *Sebi*, whereas in 2006 it was *Watani Spingulai* in 2006 (18.5 per cent). This was closely followed by *Bahrami Soorgulai* (11.7 per cent).






Farmers in the south mainly chose to cultivate *Watani soorgulai* (36 per cent) and *Sebi* (24.8 per cent), whereas farmers in the east preferred *Watani spingulai* (35.8 per cent) and *Watani soorgulai* (27.4 per cent), and did not cultivate the *Sebi* variety at all. Farmers in western region preferred *Sebi* (23.5 per cent) and *Watani soorgulai* (19.3 per cent).







Figure 28: Farmers' preferred opium poppy varieties in Afghanistan, 2007








A separate study was carried out with the assistance of botanists to draw up an inventory of opium poppy varieties in Afghanistan. The results are summarized in two different tables: These tables provide a morphological description of all varieties recorded during study along with a photograph of the flower and its general description (source, occurrence, growth period, yield, preferred weather conditions etc.). A total of 21 different varieties of *Papaver somniferum* (opium poppy) were recorded.

Table 27: Morphological description of opium poppy varieties in Afghanistan

Variety name	Occurrence	Flower colour	No. of sepals	No. of petals	Plant height (cm)	Capsule size & description (height x diameter, in cm)	No. of stigmatic rays	Ripening	No. of incisions, opium quality	Photo
<i>Papaver somniferum</i> Var.: Persian White	Nangarhar (% area covered: 10 %)	White	2	4	125-130	5.5x19.5 with no/ small longitudinal waves	10-13 standing	Early	3-4, high opium, high water content.	
<i>Papaver somniferum</i> Var.: Album	Nangarhar (% area covered: 20 %)	White	2	4	110-115	6x17 with no/ small longitudinal waves	10-14 creeping	Late	3-4, high opium, high water content.	
<i>Papaver somniferum</i> Var.: Danish Flag (early variety)	Nangarhar (% area covered: 60 %)	Red with white blotches on the base	2	4	110-115	6.5x16 with longitudinal waves	11-13 standing	Early	6-9, high opium, low water content	
<i>Papaver somniferum</i> Var.: Danish Flag (late variety)	Nangarhar 10 (% area covered: 10 %)	Whitish-red with white blotches on the base	2	4	120-130	6x17.5 with more longitudinal waves	10-15 smooth	Late	6-9, high fresh opium	
<i>Papaver somniferum</i> Var.: Persian Blue	Nangarhar (% area covered: negligible)	Purple with black blotches on the base	2	4	100-110	4x9, with more longitudinal waves	9-10 standing	Early	1-3, with low latex and low opium	

Variety name	Occurrence	Flower colour	No. of sepals	No. of petals	Plant height (cm)	Capsule size & description (height x diameter, in cm)	No. of stigmatic rays	Ripening	No. of incisions, opium quality	Photo
<i>Papaver somniferum</i> Var.: Danish Flag	Hilmand, Kandahar (% area covered: 60 %)	Pink with blotches on the base	2	4	120-122	6x17.5, with more longitudinal waves	12-13 standing	Late	7-8, high opium, high water content.	
<i>Papaver somniferum</i> Var.: Laciniatum (single-flowered)	Hilmand, Kandahar (% area covered: 20 %)	Deep red margins with pink bases	2	4	118-122	6x5.5, with no/ small longitudinal waves	11-14, creeping	Late	5-6, high opium, high water content.	
<i>Papaver somniferum</i> Var.: Laciniatum (late-maturing, single-flowered)	Hilmand, Kandahar (% area covered: 20 %)	Pink margins with white bases	2	4	118-122	6x 6.5, with no/ small longitudinal waves	11-14 creeping	Late	5-6, high opium, high water content.	
<i>Papaver somniferum</i> Var.: Gigantean (Shawano or Baronial)	Hilmand, Kandahar (% area covered: 20 %)	Deep pink or rose margins with white bases	2	4	125-128	6.5x7, smooth	11-14, creeping	Early	6-8, high opium, high water content	
<i>Papaver somniferum</i> Var.: Danish Flag (early ripening variety)	Balkh (% area covered: 30 %)	Red with white blotches on the base	2	4	130-135	5.5x19.5, with no/ small longitudinal waves	10-14 standing	Early	6-8, high opium, low water content	
<i>Papaver somniferum</i> Var.: Danish Flag	Balkh (% area covered: 20 %)	Pink with white blotches at the base	2	4	120-125	6x17.5, with no/ small longitudinal waves	10-13 standing	Late	7-10, high water content	

Variety name	Occurrence	Flower colour	No. of sepals	No. of petals	Plant height (cm)	Capsule size & description (height x diameter, in cm)	No. of stigmatic rays	Ripening	No. of incisions, opium quality	Photo
<i>Papaver somniferum</i> Var.: Album (classified)	Balkh (% area covered: 30 %)	White	2	4	125-130	5.5x19.5, with no/ small longitudinal waves	2-12 standing	Early	3-4, high opium, high water content	
<i>Papaver somniferum</i> Var.: Danish Flag (early ripening variety)	Badakhshan (% area covered: 25 %)	Red with white blotches on the base	2	4	115-120	6x19, with no/ small longitudinal waves	10-14 standing or smooth	Early	7-10 high opium, low water content	
<i>Papaver somniferum</i> Var.: Danish Flag	Badakhshan (% area covered: 30 %)	Pink with white blotches at the base.	2	4	125-130	6x17.5, with no/ small longitudinal waves	11-14, standing	Late	8-13, high opium, high water content	
<i>Papaver somniferum</i> Var.: Persian White	Badakhshan (% area covered: 30 %)	white	2	4	125-130	5x16.5, with no/ small longitudinal waves	12-16, standing or smooth	Late	4-5, high opium, high water content	
<i>Papaver somniferum</i> Var.: Hungarian Blue	Badakhshan (% area covered: 25 %)	Purple	2	4	110-115	7x15.5, longer and smoother than the other varieties	12-16, standing first purplish, later get green color	Late	2-3, low opium, low water content	






Variety name	Occurrence	Flower colour	No. of sepals	No. of petals	Plant height (cm)	Capsule size & description (height x diameter, in cm)	No. of stigmatic rays	Ripening	No. of incisions, opium quality	Photo
<i>Papaver somniferum</i> Var.: Danish Flag (early ripening variety)	Badakhshan (% area covered: 30 %)	Red with white blotches on the base	2	4	80-100	5x15.5, with no/ small longitudinal waves	10-14, standing or smooth.	Early	4-5, high opium, low water content.	
<i>Papaver somniferum</i> Var.: Danish Flag (Jalalabady with pink flowers).	Badakhshan (% area covered: 25 %)	Pink with white blotches at the base.	2	4	100-105	6x17.5, with no/ small longitudinal waves	11-14, standing	Late	7-8, high opium, high water content	
<i>Papaver somniferum</i> Var.: Persian White	Badakhshan (% area covered: 20 %)	White	2	4	100-108	5x16.5, with no/ small longitudinal waves	12-16, standing or smooth	Late	4-5, high opium, high water content	
<i>Papaver somniferum</i> Var.: Hungarian Blue	Badakhshan (% area covered: 25 %)	Purple	2	4	110-115	7x15.5, longer and smoother than the other varieties	12-16, standing, first purplish, later becoming green	Late	2-3, low opium, low water content	
<i>Papaver somniferum</i> Var. Persian Blue	Badakhshan (% area covered: 30 %)	Purple with dark blotches on the base.	2	4	110-115	4x9.5, longer and smoother than the other varieties	9-12, standing, first purplish, later becoming green	Late	1-2, low opium, low water content	

Table 28: General description of opium poppy varieties in Afghanistan

Variety name	Occurrence	Source of seed	Growth period	Fresh opium yield (kg/ha)
<i>Papaver somniferum</i> var. Persian white	Nangarhar (% area covered: 10 %)	Local	(Nov-May)	62-65
<i>Papaver somniferum</i> var. Album	Nangarhar (% area covered: 20 %)	Local (initially from Kandahar)	Nov-May	65-70
<i>Papaver somniferum</i> var. Danish flag (early variety)	Nangarhar (% area covered: 60 %)	Local (from the same village)	Nov-May	65-70
<i>Papaver somniferum</i> var. Danish flag (late variety)	Nangarhar (% area covered: 10 %)	Local (owned seed of the farmers)	Nov- May	70
<i>Papaver somniferum</i> Var.: Persian Blue	Nangarhar (% area covered: negligible)	Local (mixed with the desire seed)	Nov-late May	35-40
<i>Papaver somniferum</i> Var.: Danish Flag (early variety)	Hilmand, Kandahar (% area covered: 20 %)	Local (initially from Jalalabad)	Nov-May	65
<i>Papaver somniferum</i> Var.: Danish Flag	Hilmand, Kandahar (% area covered: 20 %)	Local (initially from Jalalabad)	Nov-late May	70-75
<i>Papaver somniferum</i> Var.: Laciniatum (single-flowered).	Hilmand, Kandahar (% area covered: 20 %)	Local	Nov-May	65-70
<i>Papaver somniferum</i> Var.: Laciniatum (late-maturing, single-flowered)	Hilmand, Kandahar (% area covered: 20 %)	Local	Nov-May	67.5-72.5
<i>Papaver somniferum</i> Var.: Gigantean (Shawano or Baronial)	Hilmand, Kandahar (% area covered: 20 %)	Local	Nov-May	60-65
<i>Papaver somniferum</i> Var.: Danish Flag (early ripening variety)	Balkh (% area covered: 30 %)	Local (initially from Jalalabad)	Nov-May	55-60
<i>Papaver somniferum</i> Var.: Danish Flag	Balkh (% area covered: 20 %)	Local (initially from Jalalabad)	Nov-May	60
<i>Papaver somniferum</i> Var.: Album (classified)	Balkh (% area covered: 30 %)	Newly introduced to the area, likely from Jalalabad	Nov-May	65-70
<i>Papaver somniferum</i> Var.: Danish Flag (early ripening variety)	Badakhshan (% area covered: 25 %)	Local (initially from Jalalabad)	Nov-May	20-25

Variety name	Occurrence	Source of seed	Growth period	Fresh opium yield (kg/ha)
<i>Papaver somniferum</i> Var.: Danish Flag (late-maturing with pink flowers)	Badakhshan (% area covered: 25 %)	Local (initially from Jalalabad)	Nov-May	57.5-62.5
<i>Papaver somniferum</i> Var.: Persian White	Badakhshan (% area covered: 30 %)	Local (initially from Jalalabad)	Nov-May	65-70
<i>Papaver somniferum</i> Var.: Hungarian Blue	Badakhshan (% area covered: 20 %)	Local (initially from Jalalabad)	Nov-May	35-40
<i>Papaver somniferum</i> Var.: Danish Flag (early ripening variety)	Badakhshan (% area covered: 25 %)	Local (initially from Jalalabad)	Nov-May	35-40
<i>Papaver somniferum</i> Var.: Danish Flag (Jalalabady with pink flowers)	Badakhshan (% area covered: 25 %)	Local (initially from Jalalabad)	Nov-May	57.5-62.5
<i>Papaver somniferum</i> Var.: Hungarian Blue.	Badakhshan (% area covered: 25 %)	Local	Nov-May	35-40
<i>Papaver somniferum</i> Var.: Persian Blue	Badakhshan (% area covered: 30 %)	Local (initially from Wardoj)	Nov-May	10-20

2.5 Eradication

Eradication by province

In 2007, total eradication (including Governor-led and AEF-led eradication) reached **19,047 hectares**.

Table 29: Governor-led eradication figures (by province), 2007

Province	Eradication (ha) verified (includes eradication during lancing stage)	Eradication (ha) verified after first lancing	Effective verified eradication (ha) (eradication upto first lancing)	No. of fields eradication reported	No. of villages eradication reported	Total standing poppy after eradication in the reported villages (ha)	% of opium poppy eradication in surveyed villages
Badakhshan	1,311		1,311	2,475	273	517	72
Badghis	232		232	1,322	34	3,491	6
Baghlan	185		185	273	33	17	92
Balkh	14		14	25	3	11	56
Day Kundi	5		5	102	5	13	29
Farah	143		143	301	36	1,626	8
Faryab	337		337	1,456	110	85	80
Ghor	188		188	242	37	530	26
Hilmand	1,945	943	1,003	648	93	3,706	34
Hirat	70		70	259	65	270	21
Jawzjan	122		122	209	17	-	100
Kabul	14		14	53	5	8	64
Kandahar	7,905		7,905	3,028	425	4,951	61
Kapisa	10		10	398	34	45	18
Khost	18	2	16	171	12	-	100
Kunar	55	28	27	442	33	9	85
Kunduz	5		5	17	2	-	100
Laghman	802		802	2,497	100	111	88
Nangarhar	3,048	709	2,339	8,002	548	13,775	18
Nimroz	35		35	87	16	125	22
Nuristan	0		0	8	2	13	3
Parwan	4	3	1	144	4	-	100
Sari Pul	119	5	114	233	41	25	83
Takhar	716		716	2,249	140	268	73
Uruzgan	121		121	156	18	445	21
Zabul	183		183	67	23	61	75
Grand Total	17,587	1,689	15,898	24,864	2,109	30,103	37

Note: Eradication figures by district are provided in Annex III

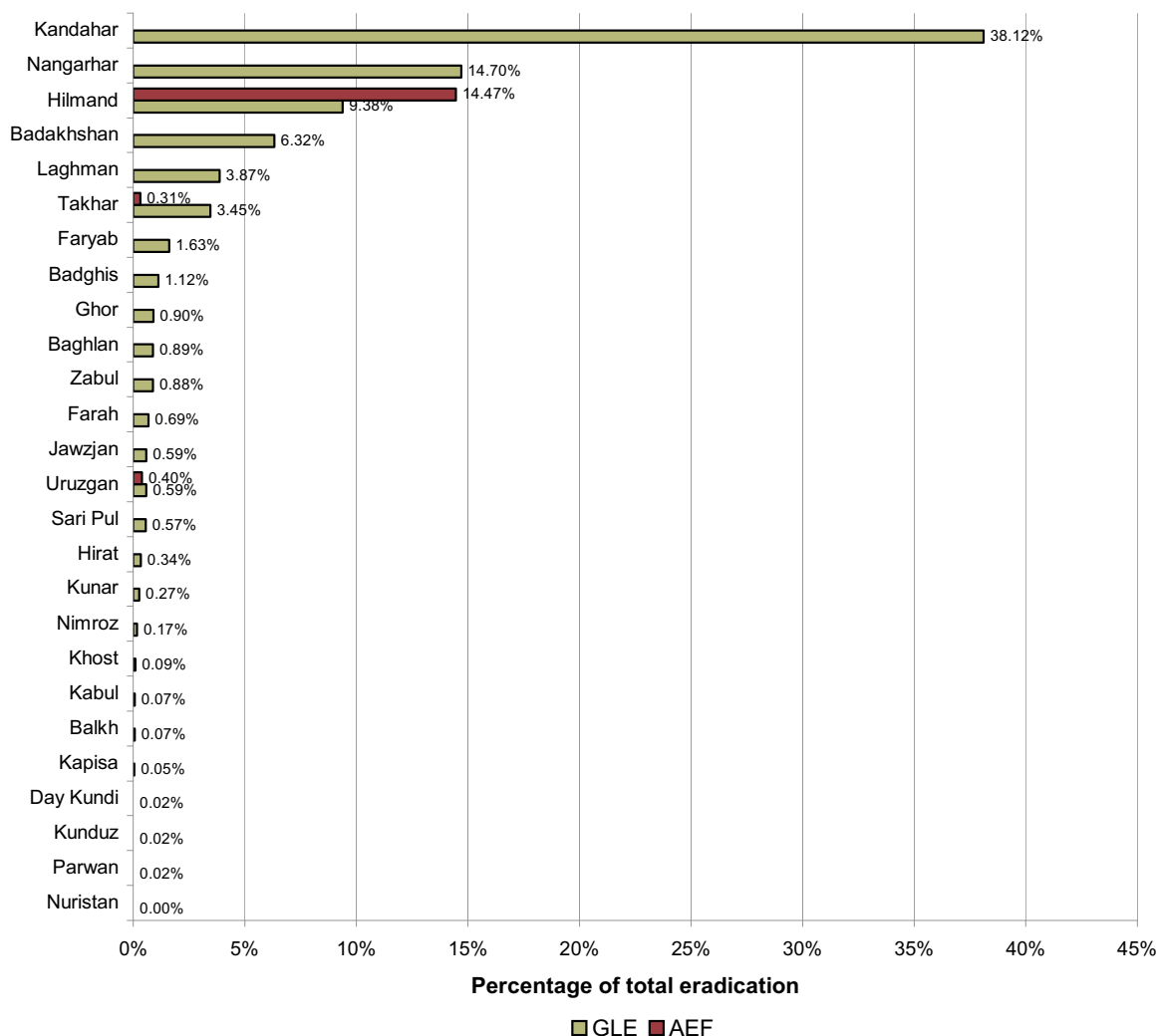
UNODC and MCN verifiers visited 2,109 villages (24,864 opium poppy fields) in 26 provinces where eradication had been carried out by governor-led eradication teams, whereas in 2006 surveyors visited some 1,400 villages in 19 provinces.

UNODC and MCN jointly verified a total of 17,587 ha of governor-led opium poppy eradication, including 1,689 hectares that were eradicated after first lancing. In accordance with the definition in the National Drug Control Strategy (NDCS) of “effective eradication”, it has been agreed that eradication after first lancing should not be taken into consideration. Effective Governor-led eradication therefore amounted to **15,898 hectares**.

AEF-led eradication forces carried out total of **3,149 hectares** of eradication, including 3,000 ha in Hilmand province, 83.44 ha in Uruzgan province and 65.22 ha in Takhar province. UNODC did not verify AEF-led eradication.

The percentage of crops eradicated (governor-led and AEF-led eradication) is shown in the figure below. Governor-led eradication was highest in Kandahar province (36 per cent), followed by Nangarhar (15 per cent), Hilmand (14 per cent) and Badakhshan (six per cent).

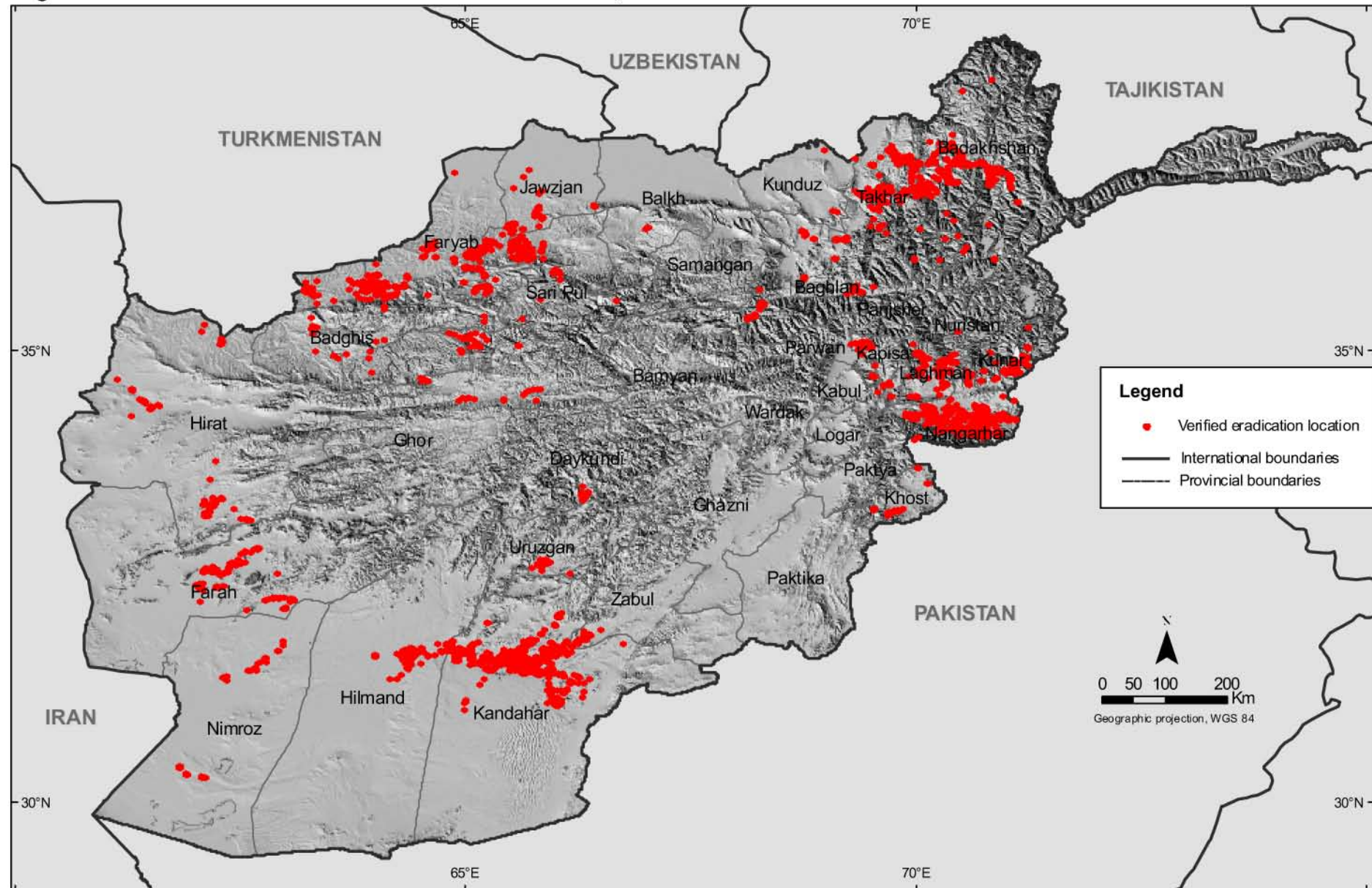
Figure 29: Percentage of total eradication (Governor-led and AEF-led eradication) by province, 2007



On average, 63 per cent of cultivated opium poppy was left standing after eradication teams had carried out their activities in the 2,109 villages visited by verifiers in 2007, though there was considerable regional variation.

Below figure shows total eradication reported at the time of release of the final periodic report. As the graph shows, the figures that were over-estimated in earlier reports were subsequently corrected using a suitable verification mechanism.

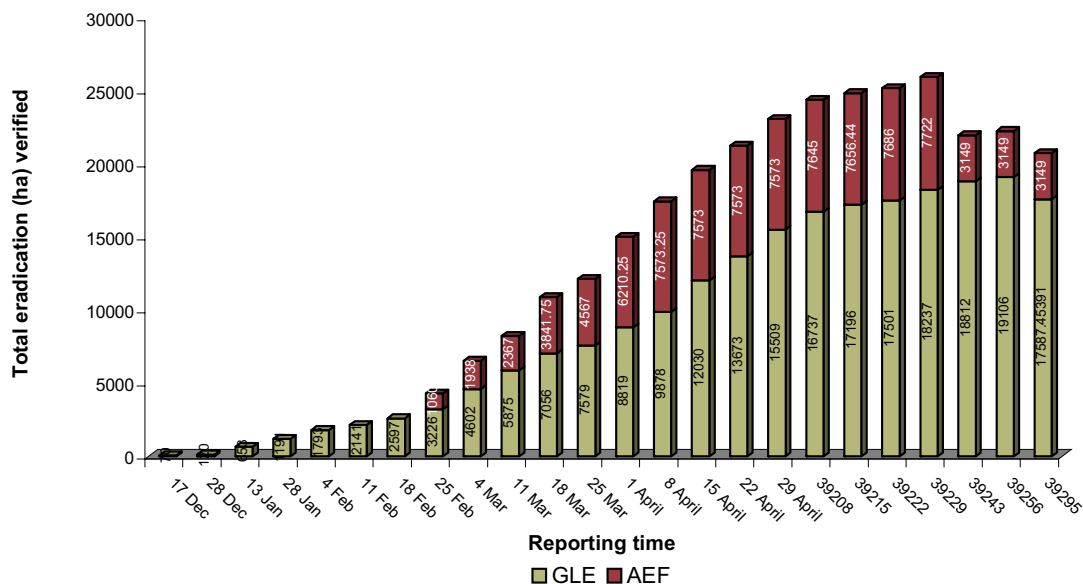
Afghanistan: Verified locations of Governor-led eradication, 2007



Source: MCN - UNODC Afghanistan Eradication Survey 2007

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

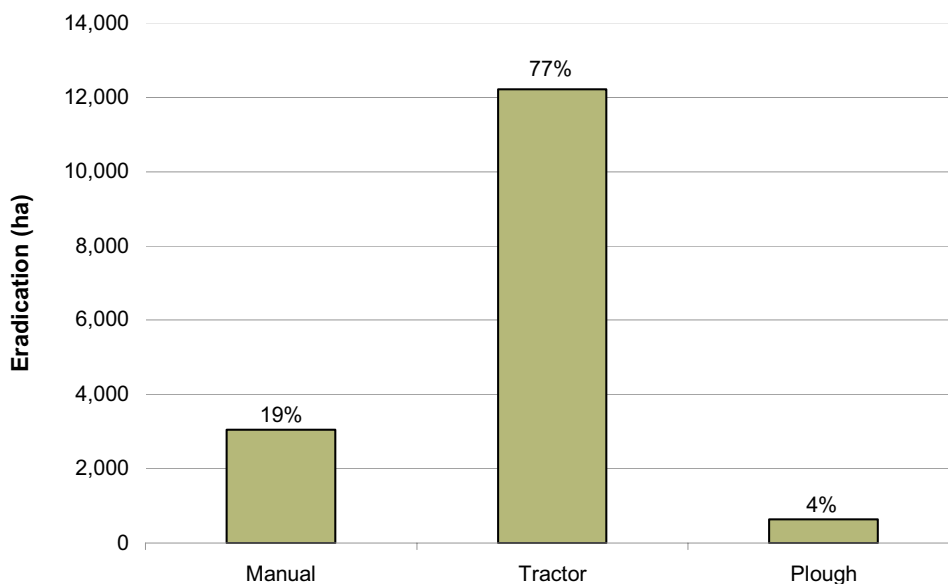
Figure 30: Total number of hectares of opium poppy eradicated (includes eradication during lancing) at the time of release of periodic reports (Governor-led and AEF-led eradication)



AEF: AEF-led eradication; GLE: Governor-led eradication

Methods of Governor-led eradication included the tractor, animal-drawn plough and manual eradication (using sticks or sickles). Seventy-seven per cent of governor-led eradication was carried out by tractor.

Figure 31: Area of opium poppy eradicated, by method





Eradication by stick



Eradication by plough

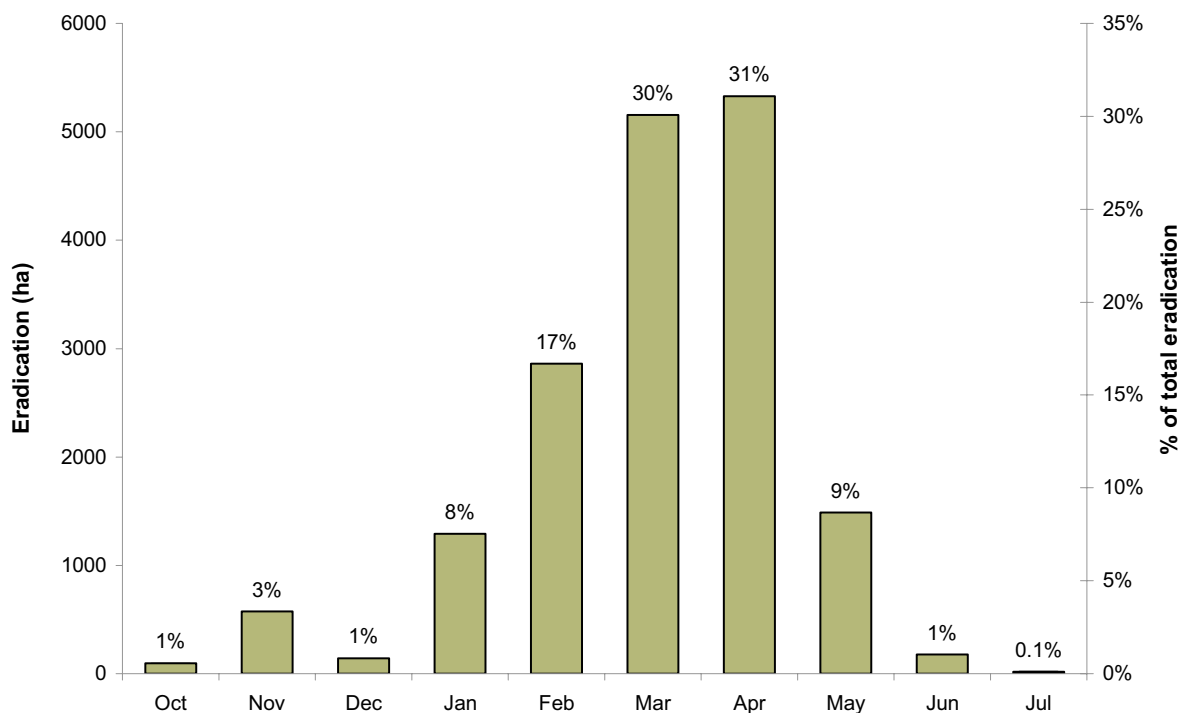


Eradication by tractor

Timing and percentage of eradication by month

The graph below shows the timing and percentage of Governor-led eradication each month. Eradication activities were carried out chiefly in March 2007 (30 per cent) and April 2007 (31 per cent). Only 12 per cent of eradication activities were carried out during the early months of cultivation, i.e., between October and January. This clearly shows the delayed implementation of eradication policy in most of the provinces, as a result of which farmers were unable to cultivate other crops.

Figure 32: Total area eradicated each month, shown as percentage



Governors began eradication activities in 26 provinces mostly in December 2006, and had concluded those activities in all target provinces by the end of July 2007. Below table shows the start and end dates of eradication activities in each province. Eradication was suspended several times in all provinces during these periods.

Table 30: Eradication situation by province

Province	Dec-06	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07
Badakhshan	12-Dec							15-Jun
Badghis			13-Feb	26-May		26-May		
Baghlan				29-Mar		25-May		
Balkh					21-Apr	06-May		
Daykundi				09-Mar	04-Apr			
Farah	14-Dec			31-Mar				
Faryab		03-Jan				26-May		
Ghor				10-Feb		27-May		
Hilmand			22-Feb		18-Apr			
Hirat		26-Jan				25-May		
Jawzjan					09-Apr	15-May		
Kabul					13-Apr	11-May		
Kandahar		22-Jan			26-Apr			
Kapisa					22-Apr		18-Jun	
Khost					26-Apr	26-May		
Kunar			26-Feb				14-Jun	
Kunduz				13-May		15-May		
Laghman	18-Dec						09-Jun	
Nangarhar	12-Dec					24-May		
Nimroz	20-Dec			09-Mar				
Nuristan		23-Jan		05-Mar				
Parwan						5-11may		
Saripul			02-Feb			29-May		
Takhar			17-Feb			31-May		
Uruzgan				14-Mar	26-Apr			
Zabul				13-Mar	26-Apr			

Impact of eradication on cultivation

Eradication did not contribute to an effective reduction in cultivation in most of the provinces. In Badakhshan, eradication was carried out at an early stage, thus allowing farmers to cultivate alternative crops. Together with a relatively successful pre-planting campaign, this contributed to an overall decline in opium poppy cultivation. The extent of Governor-led eradication since 2005 is shown in the table below.

Table 31: Governor-led eradication, 2005 - 2007

Year	Eradication (ha)	No. of provinces
2005	4 007	11
2006	13 378	19
2007	15 898	26

The Rapid Assessment Survey conducted in January 2007 concluded that the eradication campaign of 2006 had had no significant impact on reducing cultivation at the national level in 2007. Sixty-three per cent of villages opted once again to cultivate opium poppy in 2007, despite having faced eradication in 2006.

Comparison of opium poppy eradication in 2007 and 2006

Eradication (GLE and AEF) in 2007 (19,047 ha) increased by 24 per cent as compared to total eradication in 2006 (15,300 ha). The total area eradicated by governor-led forces in 2007 was 15,898 ha, compared to 13,378 ha in 2006, i.e., an increase of approximately 19 per cent. Eradication in 2007 was more intensive during its early phase, i.e., from January to March, than in 2006.

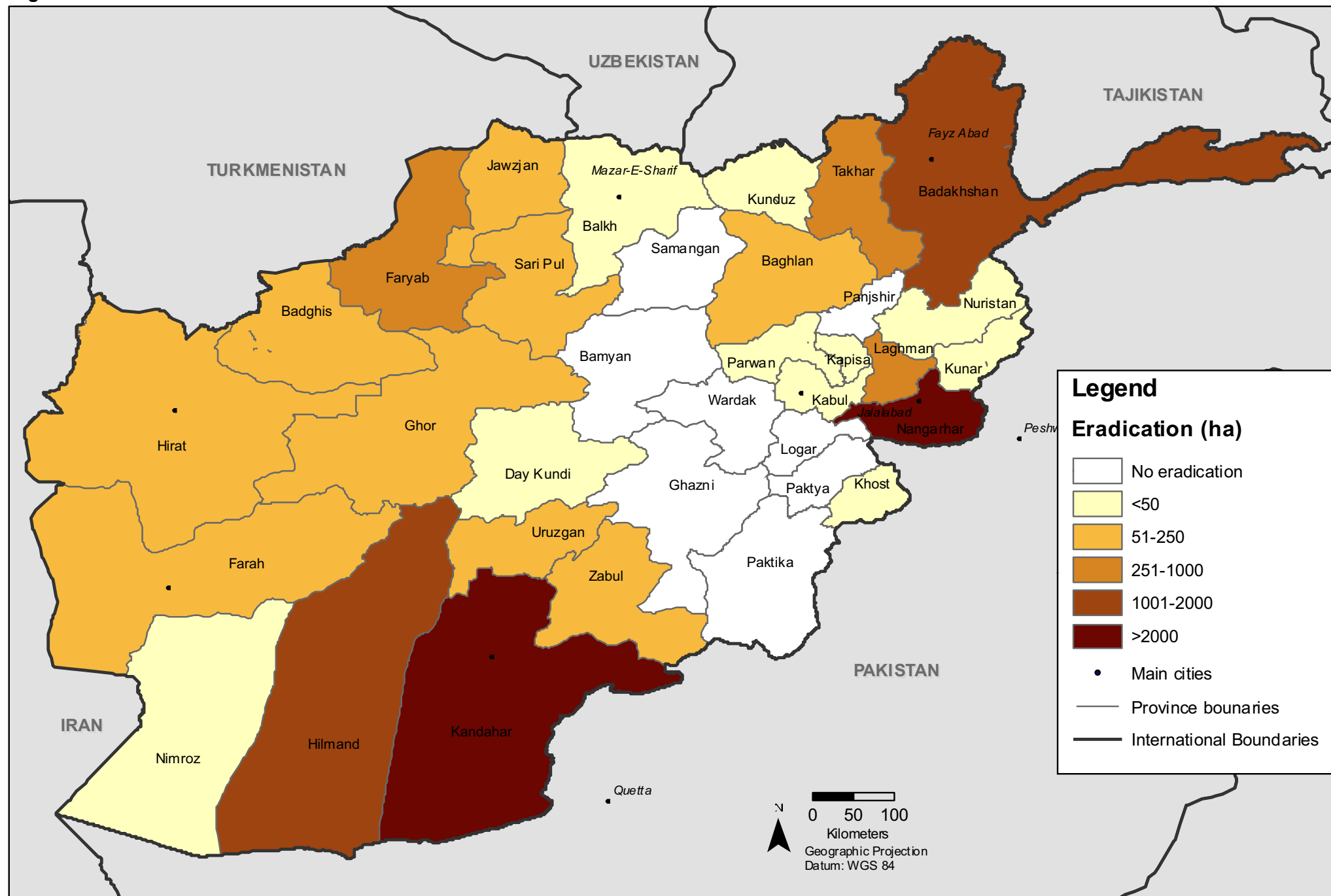
Issues during 2007 eradication

Corruption: Funds contributed by the United States Embassy towards eradication costs (US\$ 120 per hectare) did not reach eradication focal points/district administrators in many provinces. This led many eradication focal points to use eradication as an opportunity to extort money from farmers in return for sparing fields from eradication. Fields owned by influential landlords were often spared in most of the provinces.

Recognition: Success is normally assessed at the province level. Certain districts are successful in their eradication activities but do not receive attention due to province-level policies. This prevents development funds from reaching districts and further demotivates the district administrators to maintain the same performance in future.

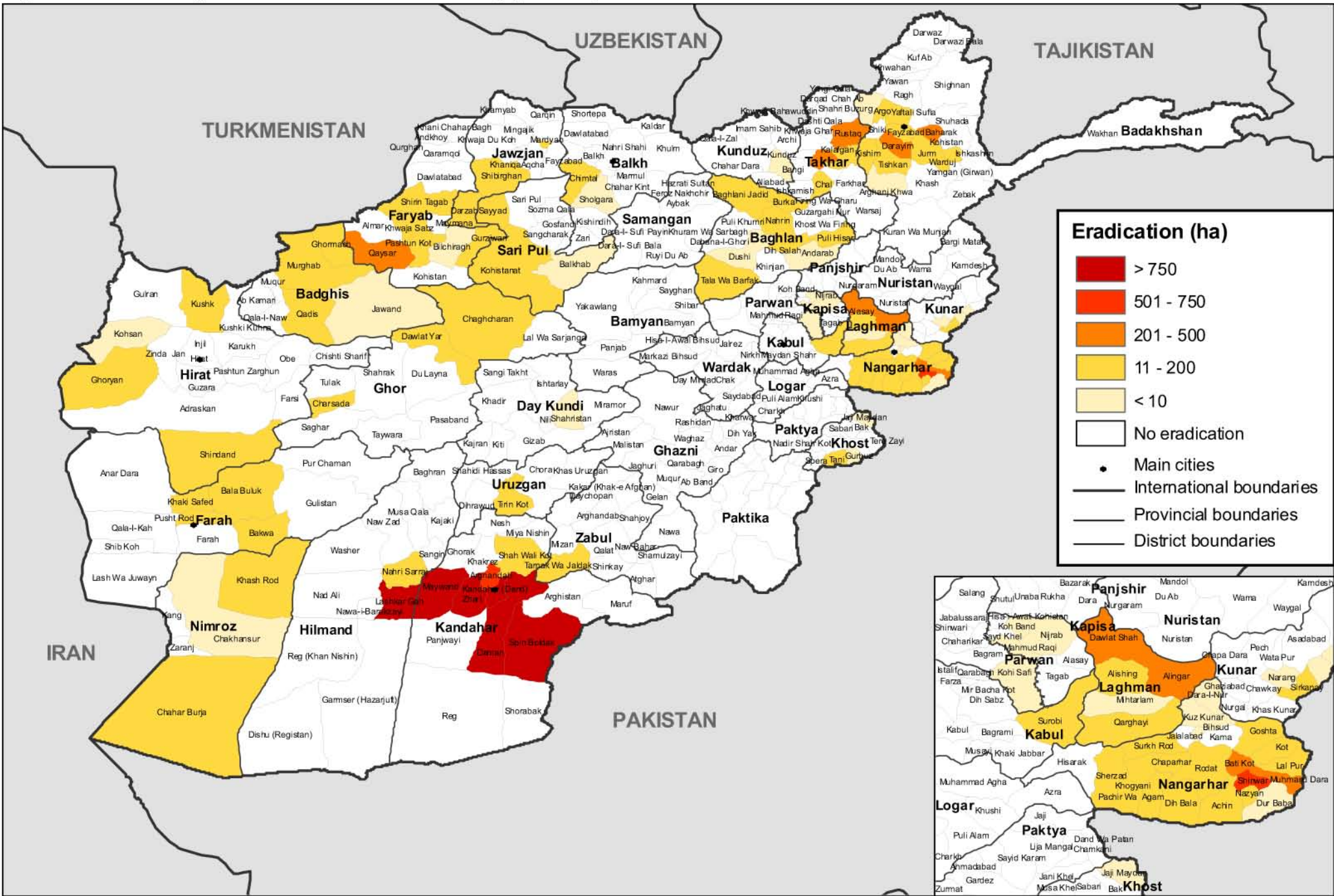
Security: There was a surge in incidents of resistance to eradication compared to previous years. Nineteen fatalities were reported in 2007, compared to seven in 2006 and none in 2005.

Afghanistan: Verified Governor-led Eradication in 2007



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

Afghanistan: Verified governor-led Eradication in 2007 (by district)



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

Eradication: Regional findings

Eastern region (Kapisa, Kunar, Laghman, Nangarhar, Nuristan)

Nangarhar

- Governor-led eradication was concluded on 24 May 2007. A total of 2,339 ha of opium poppy in 548 villages were verified to have been eradicated.
- Additional 709 hectares of opium poppy were verified to have been eradicated by Governor-led eradication forces after first lancing (Annex V).

Figure 33: Validation of verified eradication using satellite data in Nangarhar province



- Field-based eradication verification was partially validated using satellite data in an area of Chaparhar district, Nangarhar province. A cluster of eradication GPS points was overlaid on satellite images and the eradicated area was digitized. The following observations were made:
 - The total area verified by MCN and UNODC verifiers was 13.43 Jerib (Jerib = 1/5 hectare. The Jerib is a standard measurement unit used in Afghanistan).
 - The total area eradicated, measured using the satellite images, was 13.95 Jerib.

- A snapshot of the satellite images (see figure above) shows that the numbers in white represent measurements carried out in the field, whereas the numbers in cyan show the area of digitized polygons.

Laghman

- Governor-led eradication was concluded on 10 June 2007. A total of 802 hectares in 100 villages were verified to have been eradicated.

Nuristan

- Governor-led eradication was concluded on 5 March 2007. A total of 0.44 hectare in two villages was verified to have been eradicated.

Kunar

- Governor-led eradication was concluded on 14 June 2007. A total of 27 hectares in 33 villages were verified to have been effectively eradicated.
- A total of 28 hectares of opium poppy were eradicated by Governor-led eradication forces after first lancing (Annex V).



Harvested poppy in Kunar province in mid-May



Harvested wheat in Kunar province in mid-May

Kapisa

- Governor-led eradication was concluded on 25 June 2007. A total of 10 hectares in 34 villages were verified to have been eradicated.



Growth stage of opium poppy (spring cultivation) in Kapisa province in late May 2007



Opium poppy eradication in Kapisa province in late May 2007

Central region (Kabul, Khost, Parwan)

Kabul

- Governor-led eradication was concluded on 11 May 2007. A total of 14 hectares in five villages were verified to have been eradicated.

Khost

- Governor-led eradication was concluded on 26 May 2007. A total of 16 hectares in 12 villages were verified to have been effectively eradicated.
- A total of two hectares of opium poppy were eradicated by Governor-led eradication forces after first lancing (Annex V).

Parwan

- Governor-led eradication was concluded on 11 May 2007. A total of one hectare in four villages was verified to have been effectively eradicated.
- A total of three hectares of opium poppy were eradicated by Governor-led eradication forces after first lancing (Annex V).

Southern region (Hilmand, Kandahar, Uruzgan, Zabul, Day Kundi)

Kandahar

- Governor-led eradication was concluded on 26 April 2007. A total of 7,905 hectares of opium poppy in 425 villages were verified to have been eradicated.
- Eradication activities ended before the lancing stage.



Healthy opium poppy in Kandahar province at the end of April



Opium poppy eradication in Kandahar province in April 2007

Hilmand

- Governor-led eradication was concluded on 26 April 2007. A total of 1,003 hectares of opium poppy in 93 villages were verified to have been effectively eradicated.
- A total of 943 hectares of opium poppy were eradicated by governor-led eradication forces after first lancing (Annex V).
- AEF-led eradication ended on 7 April 2007. A total of 7,573 hectares were reported by AEF as having been eradicated. Based on satellite verification by the United Kingdom and the United States of America,

that estimate was revised to 3,000 hectares. MCN and UNODC did not verify AEF-led eradication. Details are provided in Annex III.



Opium poppy lancers in Hilmand province



Lancing tools available in Laskar Gah Market

Uruzgan

- Governor-led eradication was concluded on 26 April 2007. A total of 121 hectares of opium poppy in 18 villages were verified to have been eradicated.
- A total of 83.44 hectares were reported by AEF as having been eradicated by 8 May 2007. MCN and UNODC did not verify AEF-led eradication. Details are provided in Annex III.

Day Kundi

- Governor-led eradication was concluded in this province on 4 April 2007. A total of five hectares of opium poppy in five villages were verified to have been eradicated.

Zabul

- Governor-led eradication was concluded 26 April 2007. A total of 183 hectares of opium poppy in 23 villages were verified to have been eradicated.

Western region (Farah, Ghor, Hirat, Badghis, Nimroz)

Farah

- Governor-led eradication was concluded on 31 March 2007. A total of 143 hectares of opium poppy in 36 villages were verified to have been eradicated.



Growth stage of opium poppy in Pusht Rod district of Farah province in mid-May 2007



Opium poppy lancing in Shindand district, Hirat Province, early May 2007

Hirat

- Governor-led eradication was concluded on 25 May 2007. A total of 70 hectares in 65 villages were verified to have been eradicated.

Nimroz

- A total of 35 hectares in 16 villages were verified to have been eradicated by governor-led eradication forces.

Ghor

- Governor-led eradication was suspended in this province on 27 May 2007. A total of 188 hectares in 37 villages were verified to have been eradicated.

Badghis

- Governor-led eradication was concluded on 26 May 2007. A total of 232 hectares in 34 villages were verified to have been eradicated.



Poppy eradication in Khashrod district of Nimroz province



Poppy growth stage in Murghab district of Badghis province

Northern region (Baghlan, Balkh, Faryab, Jawzjan, Kunduz, Sari Pul, Samangan)

Sari Pul

- A total of 114 hectares in 41 villages were verified to have been eradicated by Governor-led eradication forces.
- A total of five hectares of opium poppy were eradicated by Governor-led forces after first lancing (Annex V).

Faryab

- Governor-led eradication was concluded on 26 May 2007. A total of 337 hectares in 110 villages were verified to have been eradicated.

Baghlan

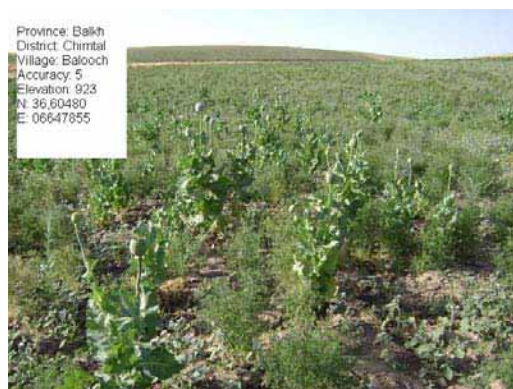
- Governor-led eradication was concluded on 25 May 2007. A total of 185 hectares in 33 villages were verified to have been eradicated.

Jawzjan

- Governor-led eradication was concluded on 15 May 2007. A total of 122 hectares in 17 villages were verified to have been eradicated.

Balkh

- Governor-led eradication was concluded on 6 May 2007. A total of 14 hectares in three villages were verified to have been eradicated.



Opium poppy growth stage in Chimtāl district, Balkh province (Alberz mountain), early May 2007

Kunduz

- Governor-led eradication was concluded on 5 May 2007. A total of five hectares in two villages were verified to have been eradicated.

Samangan

- There were no eradication activities in Samangan province in 2007.

North-eastern region (Badakhshan, Takhar)

Badakhshan

- Governor-led eradication was concluded on 20 June 2007. A total of 1,311 hectares in 273 villages were verified to have been eradicated.

Takhar

- Governor-led eradication was concluded on 31 May 2007. A total of 716 hectares in 140 villages were verified to have been eradicated.
- AEF eradicated a total of 65.21 hectares.



Opium poppy eradication in Darayim district, Badakhshan province, late May



Opium poppy eradication in Taluqan district, Takhar province, mid-May

2.6 Potential opium production

As a result of record levels of cultivation and high yield (42.5 kg/ha as the national average), potential opium production in Afghanistan for 2007 was 8,200 metric tons, representing an increase of around 34 per cent compared to 2006.

Opium production in Afghanistan in 2007 was 24 per cent higher than global opium production in 2006 (6,610 metric tons). Global opium production in 2007 reached its highest level since start of systematic monitoring, at more than 8,800 metric tons¹³. The proportion of global opium production accounted for by Afghanistan increased from 92 per cent in 2006 to 93 per cent in 2007.

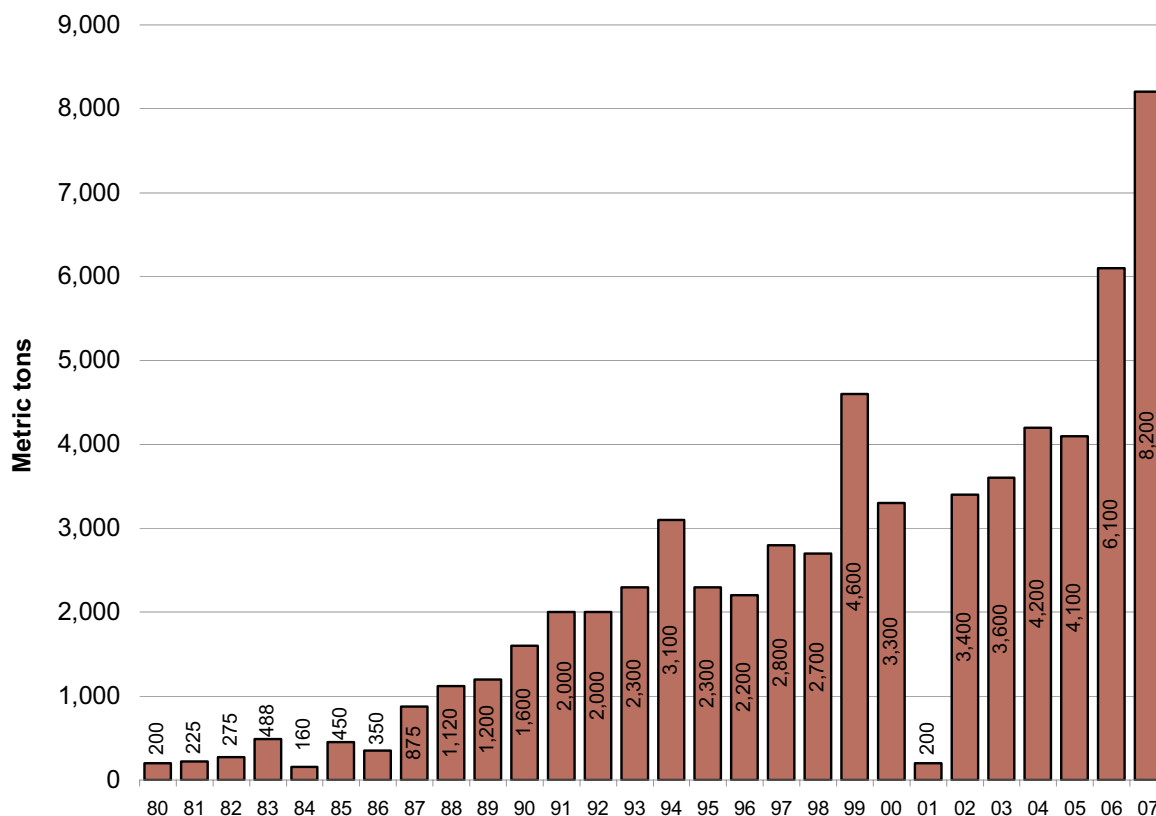
The contribution of Afghanistan to global opium production has been increasing since 2002. Almost 82 per cent of total opium production is concentrated in the south and south-west of Afghanistan.

Table 32: Afghanistan's contribution to global opium production since 2002

Year	Afghanistan opium production (metric tons)	Global opium production (metric tons)	Proportion of global production accounted for by Afghanistan (per cent)
1998	2 693	4 346	62
1999	4 565	5 764	79
2000	3 276	4 691	70
2001	185	1 596	12
2002	3 400	4 491	76
2003	3 600	4 765	76
2004	4 200	4 850	87
2005	4 100	4 620	89
2006	6 100	6 610	92
2007	8 200	8 847	93

¹³ Based on preliminary opium production estimates for some countries and regions.

Figure 34: Potential opium production in Afghanistan (metric tons), 1980 – 2007



Sources: UNODC, “The Opium Economy in Afghanistan: an International Problem”; UNODC Opium Surveys, 1994-2007.

Figure 35: Global potential opium production (metric tons), 1990 – 2007

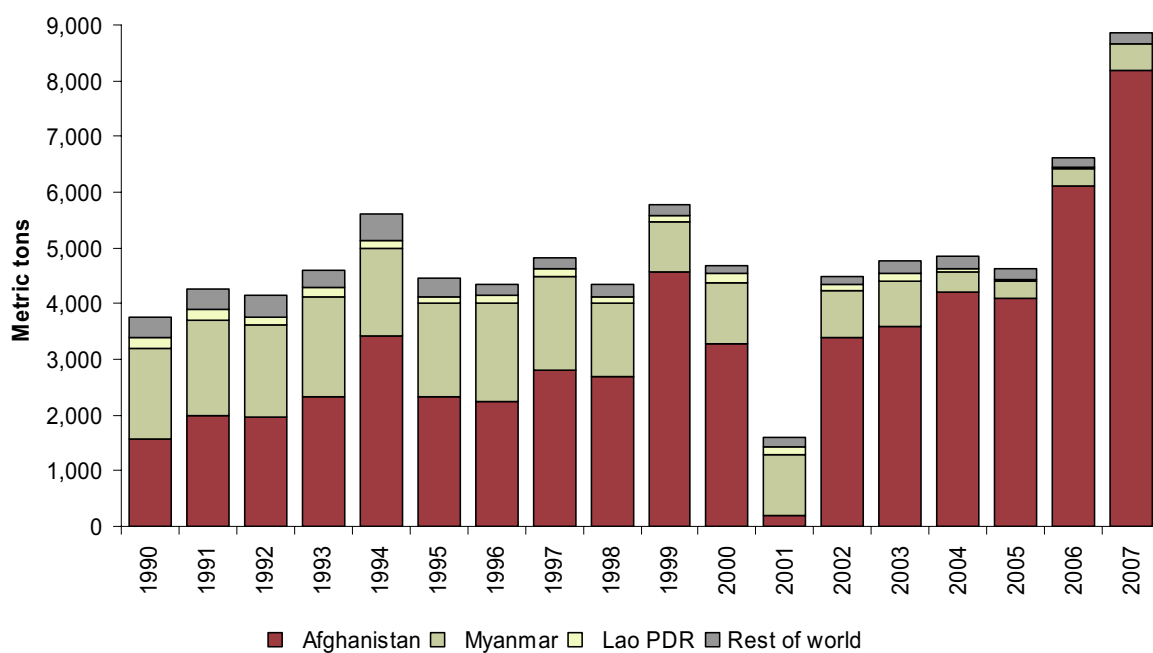


Table 33: Main opium-producing provinces (% of total production), 2006 – 2007

Province	Percentage of production in 2006	Percentage of production in 2007
Hilmand	46%	53%
Nangarhar	3%	12%
Kandahar	7%	9%
Farah	5%	5%
Uruzgan	4%	5%
Nimroz	3%	5%

Table 34: Potential opium production by region, 2006 - 2007

PROVINCE	Production 2006 (mt)	Production 2007 (mt)	Change 2006-2007 (mt)	Change 2006-2007 (%)	REGION
Kabul	2	26	24	1198%	Central
Khost	3	0	-3	-100%	Central
Logar	0	0	0	0%	Central
Paktya	0	0	0	0%	Central
Panjshir	0	0	0	0%	Central
Parwan	3	0	-3	-100%	Central
Wardak	0	0	0	0%	Central
Ghazni	0	0	0	0%	Central
Paktika	0	0	0	0%	Central
Central Region	8	26	18	224%	
Kapisa	10	40	30	303%	East
Kunar	44	18	-26	-59%	East
Laghman	30	20	-10	-35%	East
Nangarhar	179	1 006	827	462%	East
Nuristan	41	0	-41	-100%	East
Eastern Region	304	1 084	780	257%	
Badakhshan	503	152	-351	-70%	North-East
Takhar	87	43	-44	-50%	North-East
Kunduz	4	0	-4	-100%	North-East
North-eastern Region	594	195	-399	-67%	
Baghlan	134	36	-98	-73%	North
Balkh	291	0	-291	-100%	North
Bamyan	0	0	0	0%	North
Faryab	162	135	-27	-17%	North
Jawzjan	92	54	-38	-41%	North
Samangan	81	0	-81	-100%	North
Sari Pul	106	9	-97	-92%	North
Northern Region	866	233	-633	-73%	
Hilmand	2,801	4,399	1598	57%	South
Kandahar	405	739	334	83%	South
Uruzgan	236	411	175	74%	South
Zabul	113	61	-52	-46%	South
Day Kundi	148	135	-13	-9%	South
Southern Region	3 703	5 745	2 042	55%	
Badghis	73	100	27	37%	West
Farah	297	409	112	38%	West
Ghor	115	44	-71	-62%	West
Hirat	54	33	-21	-38%	West
Nimroz	71	372	301	424%	West
Western Region	610	959	349	57%	
Total (rounded)	6 100	8 200	2 100	34%	

2.7 Security

During the survey period, the security situation was fragile in most of the southern and western (Nimroz and Farah) provinces. In the south, military operations were ongoing and Anti-Government Elements (AGE) were active. Unstable security conditions in the region reportedly played a major role in decisions by households to cultivate opium poppy, since the AGE were able to encourage and even threaten farmers to cultivate opium poppy. The main increase in cultivation took place in the southern provinces, where most of the high- and extreme-risk areas are located. The security situation was relatively good in the northern and north-eastern provinces, where poppy cultivation fell dramatically in 2007. Cultivation increased in the south of Nangarhar province, where security is very poor.

Most of the security incidents that arose during the eradication verification survey were due to resistance by the farmers to eradication forces. Sixteen security incidents in which eradication was resisted were reported from seven provinces, namely Nangarhar, Kandahar, Farah, Laghman, Hilmand, Badghis and Badakhshan. Fifteen policemen and four farmers died as a result of the incidents. Thirty-one people were severely injured, and several tractors used in eradication were burned by farmers. The highest number of incidents was reported from Nangarhar, followed by Kandahar and Farah.

The highest number of incidents was reported from Nangarhar province, including mine explosions, use of guns by farmers and one case in which a farmer committed suicide. Surprisingly, only one fatal incident was reported from Hilmand, despite the dominance of insurgents in that province. This may be because eradication was limited to the central part of Hilmand and was carried out in negotiation with the farmers.

Table 35: Security incidents owing to resistance to eradication in 2007

Province	No. of incidents	No. of fatalities among police officers	No. of fatalities among farmers	Injury	Tractors burned
Nangarhar	7	4	3	13	3
Kandahar	3	1	1	7	1
Farah	2	6		4	6
Laghman	1	2		5	
Hilmand	1	2		2	
Badghis	1				
Badakhshan	1				
Total	16	15	4	31	10



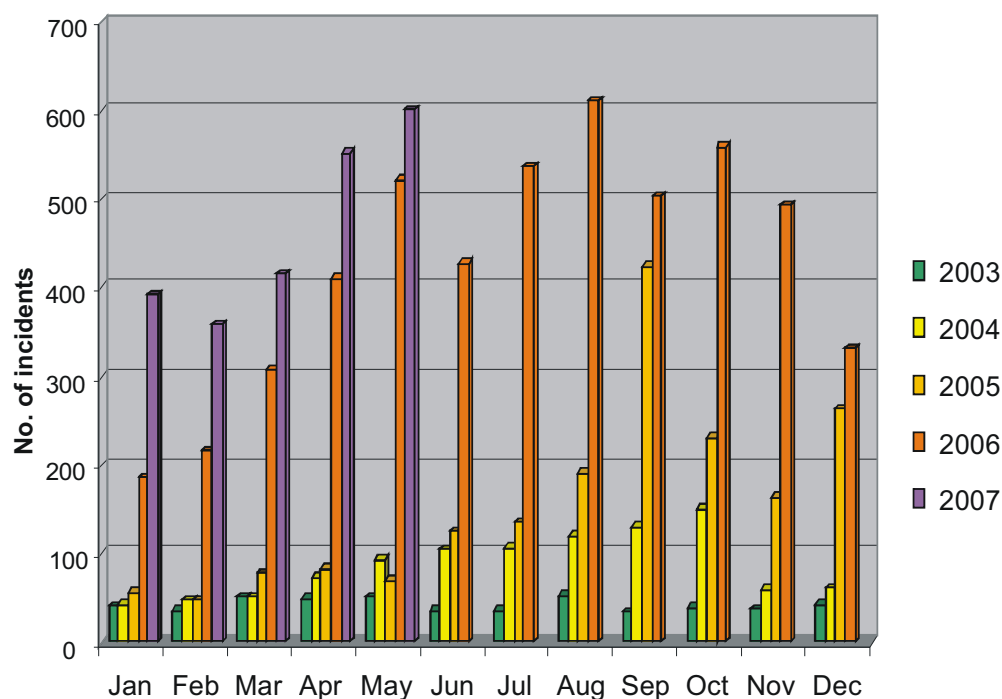
Hilmand



Kandahar

Security incidents in Afghanistan have increased each year since 2003. The chart below shows security incidents from January 2003 to May 2007, as recorded by the United Nations Department of Safety and Security (UNDSS). Security incidents increased sharply after 2004, particularly in the south and south-western provinces. Levels of opium poppy cultivation are highest (80 per cent) in Hilmand, Kandahar, Uruzgan, Day Kundi, Farah and Nimroz provinces, where security is very poor. Most of the districts in this region cannot be reached by the United Nations agencies or by non-governmental organizations. Anti-government elements and drug traders are very active in the region. The security map (page 32) shows the clear difference between the northern and southern provinces in terms of security.

Figure 36: Number of security incidents between January 2003 and May 2007



Source: UNDSS, Afghanistan

2.8 Drug trafficking

According to the reports of the surveyors, the number of heroin laboratories in Afghanistan increased in 2007. It is common knowledge that there are important opium markets and heroin laboratories in the Musa Qala and Sangin districts of Hilmand. However, no action has yet been taken to eliminate these laboratories and markets. In the south and east parts of Afghanistan, opiate and precursor trafficking is mainly controlled by tribes, whereas in the northern provinces such trafficking is controlled by local commanders.

According to the Afghan Government, there are at least 167 unofficial border crossing points between Afghanistan and neighbouring countries. However, this figure is likely to be much higher, since much of Afghanistan's southern border with Pakistan and its south-western border with Iran is not very well controlled. There are hundreds of unofficial border crossing points between Afghanistan and Tajikistan, Uzbekistan, Turkmenistan, Iran and Pakistan. Unless these borders are controlled, opium production in Afghanistan is unlikely to stop.

Most of the opium produced in Afghanistan is converted to heroin in Afghanistan. However, the precursors needed for the conversion process are not available in Afghanistan; this means that the chemicals needed for heroin processing are imported via neighbouring countries. Afghanistan exports opiates to neighbouring countries.

Until recently, opiate demand in China and India was met by Myanmar and Laos. However, following the sharp decrease in opium production in the latter two countries, Afghan opiates have begun to be trafficked to China and India.



Afghanistan's border with Iran (Farah province)



Border point between Pakistan and Afghanistan (Hilmand province)

2.9 Opium farmers

In 2007, the survey collected data on the number of families cultivating opium poppy in Afghanistan. At the national level, it was estimated that 509,000 families (confidence interval: 437,000-653,000) were involved in opium poppy cultivation, compared to 448,000 families in 2006, i.e., an increase of 14 per cent. Based on an average of six to seven members per family¹⁴, 509,000 families represented an estimated total of 3.3 million persons, or 14.3 per cent of Afghanistan's total population of 23 million¹⁵. This means that 18.3 per cent of the rural population was involved in opium poppy cultivation, an increase from 16 per cent in 2006. The rural population is estimated at 18 million.

Figure 37: Number of families involved in opium production in Afghanistan, 2003-2007

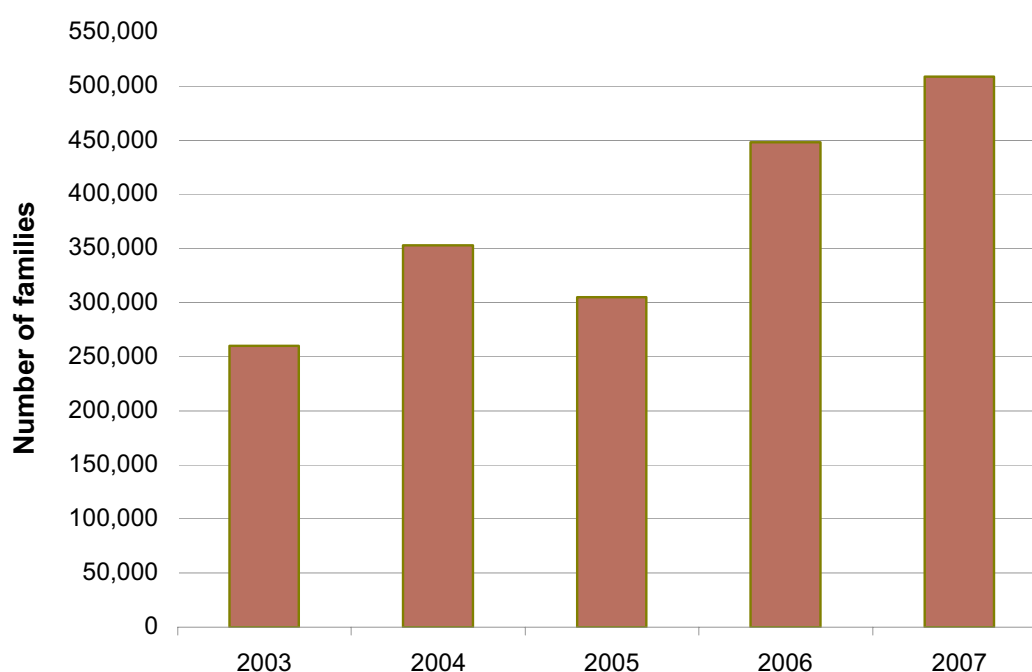


Table 36: Number of families involved in opium production, 2007

Region	Opium poppy cultivation in 2007 (ha)	Total no. of opium poppy-growing households	Percentage of total opium poppy-growing households (%)	Average size of poppy field per poppy-growing household (ha)
Central	500	2 813	1	0.18
Eastern	20 581	132 119	26	0.16
North-eastern	4 853	36 209	7	0.13
Northern	4 882	10 056	2	0.49
Southern	133 546	245 152	48	0.54
Western	28 619	82 315	16	0.35
Total (rounded)	193 000	509 000	100	0.37

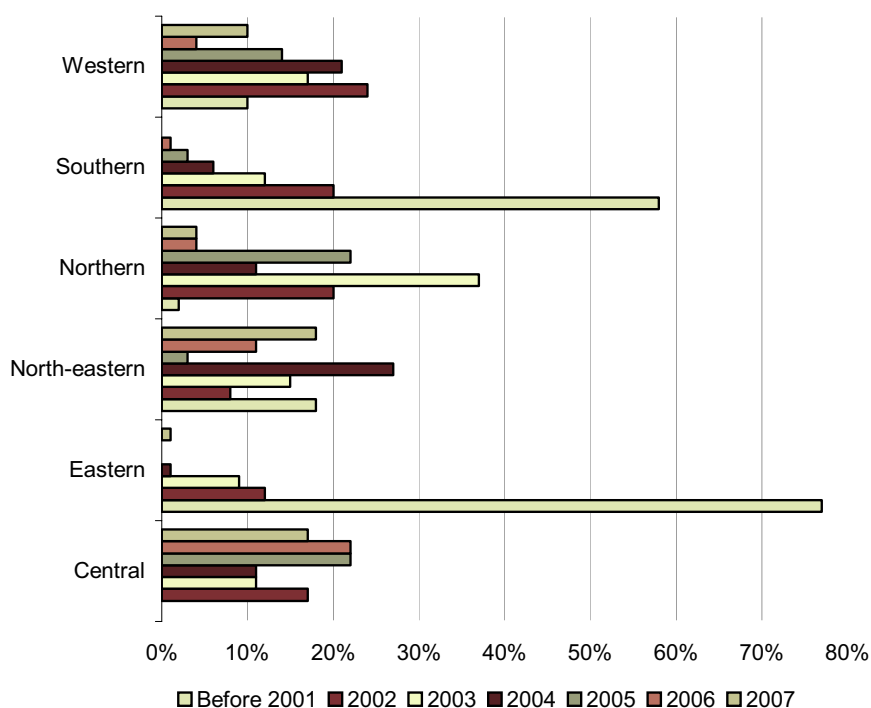
¹⁴ Food and Agriculture Organization (FAO) activities update in Afghanistan, N° 2, p. 2, January 2003

¹⁵ The Central Statistics Office of the Interim Government of Afghanistan estimated the population at 22.2 million people in 2003. Population growth is estimated at 1.9 per cent per year, resulting in a population estimate of about 23 million in 2006.

The average area of land dedicated to opium poppy cultivation per family was 0.37 ha both in 2006 and in 2007. In the main opium-producing provinces, the average area under opium poppy cultivation was 0.54 ha per household; while in the other provinces it was only around half that figure (0.13-0.35 ha per household), except in the north (0.49 ha per household).

The 14 per cent increase in the number of opium-cultivating households in 2007 does not mean that these households cultivated opium poppy for the first time in 2007. Some 46 per cent of opium poppy-growing farmers in Afghanistan began to cultivate opium poppy before 2001, while 54 per cent began after 2001. Only a small proportion of farmers began to cultivate opium poppy for the first time in 2006 (three per cent) and in 2007 (four per cent). In the southern and eastern regions, where opium poppy cultivation increased by 31 per cent and 44 per cent respectively in 2007, none of the farmers were cultivating opium poppy for the first time. Both in the southern and eastern regions, some 43 per cent of farmers who grew opium poppy in 2007 began to cultivate opium poppy before 2001, but did not necessarily cultivate it every year.

Figure 38: First year of opium poppy cultivation, by region (n=724)



Under normal conditions, three persons can harvest one *jerib* (0.19536 ha) of opium poppy in 21 days. Thus, a total of 2.9 million persons would be needed to gather the entire opium poppy harvest in Afghanistan in 2007, if all harvesting took place at the same time, compared to 2.5 million persons in 2006. Hilmand province alone required 1.54 million persons for lancing. The number of able persons available in opium poppy-cultivating families (509,000) was not sufficient to harvest the 193,000 ha of crops cultivated. Extra labour was therefore needed for harvesting, especially in southern Afghanistan. Some parts of southern Afghanistan experienced a labour shortage due to the record cultivation levels in 2007. As a result of the increased demand for opium poppy-harvesting labourers, average daily wage rates increased by 21% from US\$ 7.7 in 2006 to US\$ 9.3 in 2007. In Hilmand, due to a shortage of labourers, these wages even reached US\$ 15 per day.

Table 37: Daily wage rates for different activities in Afghanistan, 2007

Activity	Daily wage rate (US\$)
Labor (roads, construction, etc)	3.4
Lancing / gum collection	9.3
Poppy weeding	4.6
Wheat harvesting	4.0

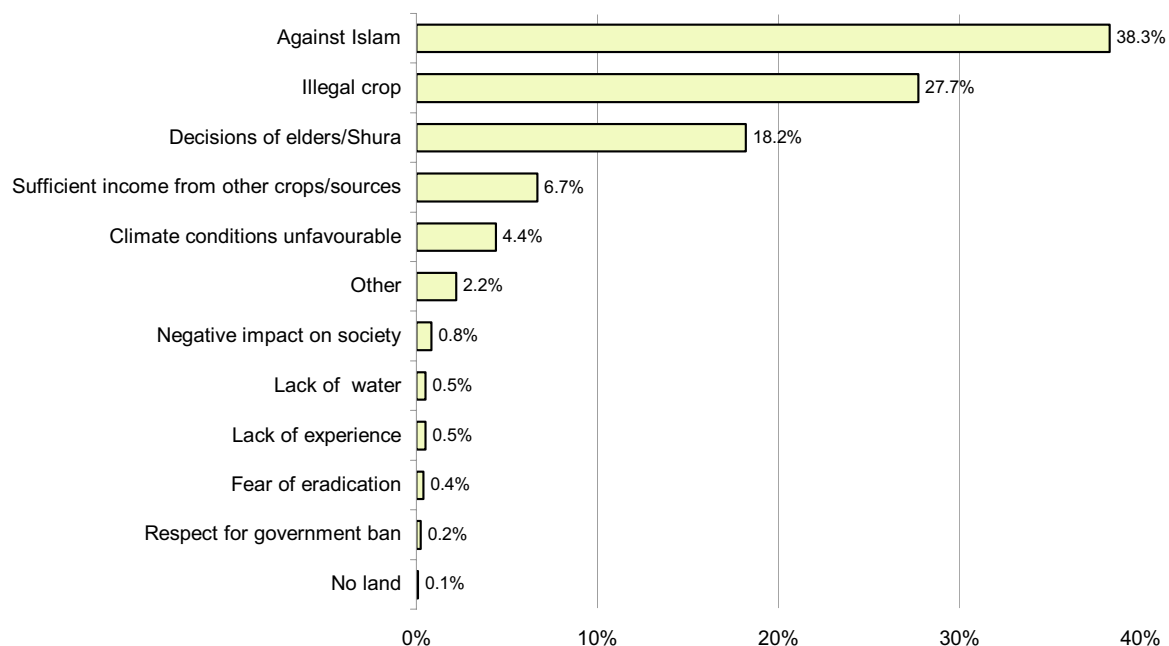
2.10 Reasons for cultivation, non-cultivation and stopping cultivation of opium poppy

As part of the survey, 2,996 farmers in 1,500 villages across Afghanistan were asked why they cultivated opium poppy, or, if applicable, why they had stopped cultivating opium poppy or had never grown opium poppy. For the purpose of analysis, the farmers were divided into four groups: active growers (engaged in opium poppy cultivation in 2007); farmers who had grown opium poppy in previous years but not in 2007 (stopped cultivating in 2007); farmers who had stopped cultivating opium poppy before 2007; and farmers who had never cultivated opium poppy.

Reasons for never cultivating opium poppy

The main reason given by farmers for never cultivating opium poppy was religion (38.3 per cent of respondents in 2007; 34.4 per cent in 2006), followed by the reason that opium poppy is an illegal crop (27.7 per cent of respondents in 2007; 25.7 per cent in 2006) and respect for the decisions of elders and the Shura not to cultivate opium poppy (18.2 per cent of respondents in 2007; 4.6 per cent in 2006). Only 0.4 per cent of this group gave fear of eradication as their reason for non-cultivation (compared to 0.1 per cent in 2006). It is therefore clear that while these farmers do not regard eradication as a threat, they respect religious rules and the decisions of the elders and of the Shura.

In southern Afghanistan, decisions of the elders and the Shura have little impact on opium poppy cultivation (nine per cent). In the east, 47 per cent of farmers gave religion as a reason for not cultivating opium poppy.

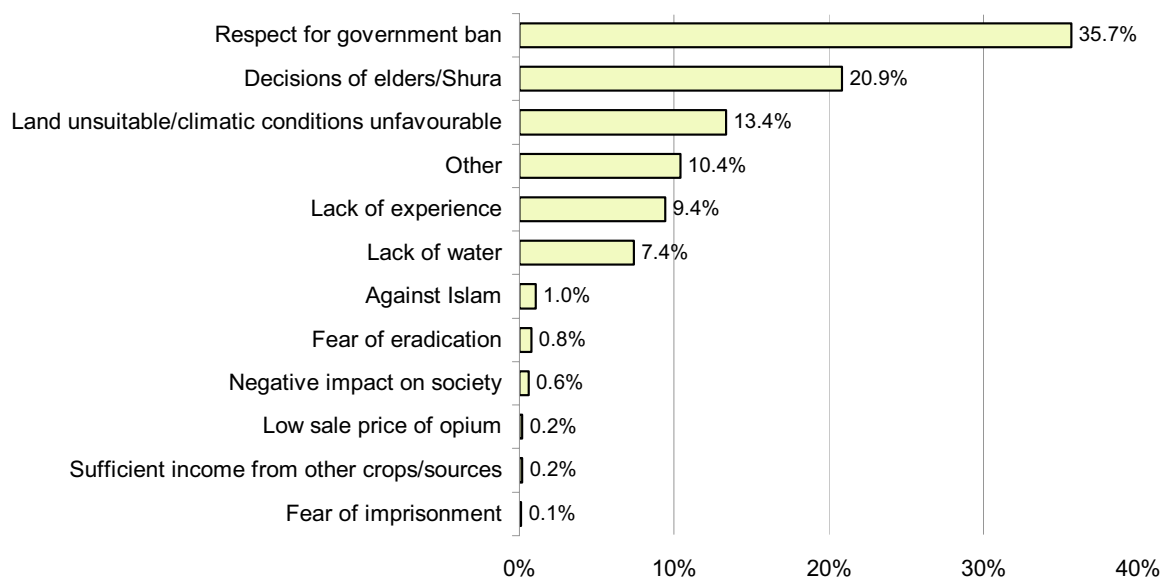
Figure 39: Reasons for never cultivating opium poppy (n=1,494 farmers from 1,500 villages)

Reasons for stopping opium poppy cultivation

35.7 per cent of farmers who had stopped opium poppy cultivation before 2007 cited the Government ban as their reason for doing so. Decisions of the elders and the Shura were regarded as important by 20.9 per cent of farmers in this group. Some farmers had attempted to cultivate opium poppy but stopped because the land was unsuitable or climate conditions unfavourable (13.4 per cent), because they lacked experience (9.4 per cent), because of a lack of water (7.4 per cent) or because opium poppy cultivation is against Islam (one per cent). Only 0.8 per cent cited fear of eradication as a reason for having stopped opium poppy cultivation. The negative impact of opium poppy on society was given by 0.6 per cent of respondents as their reason for stopping opium poppy cultivation. Ten per cent gave other reasons.

Respect for the Government ban (57 per cent) was regarded as more important in eastern Afghanistan than in other regions. Respondents in southern Afghanistan attached less importance to the decisions of the Shura and to religion (9.4 per cent) than respondents in other regions. Only 0.4 per cent of respondents in this group cited fear of eradication as a reason for stopping opium poppy cultivation.

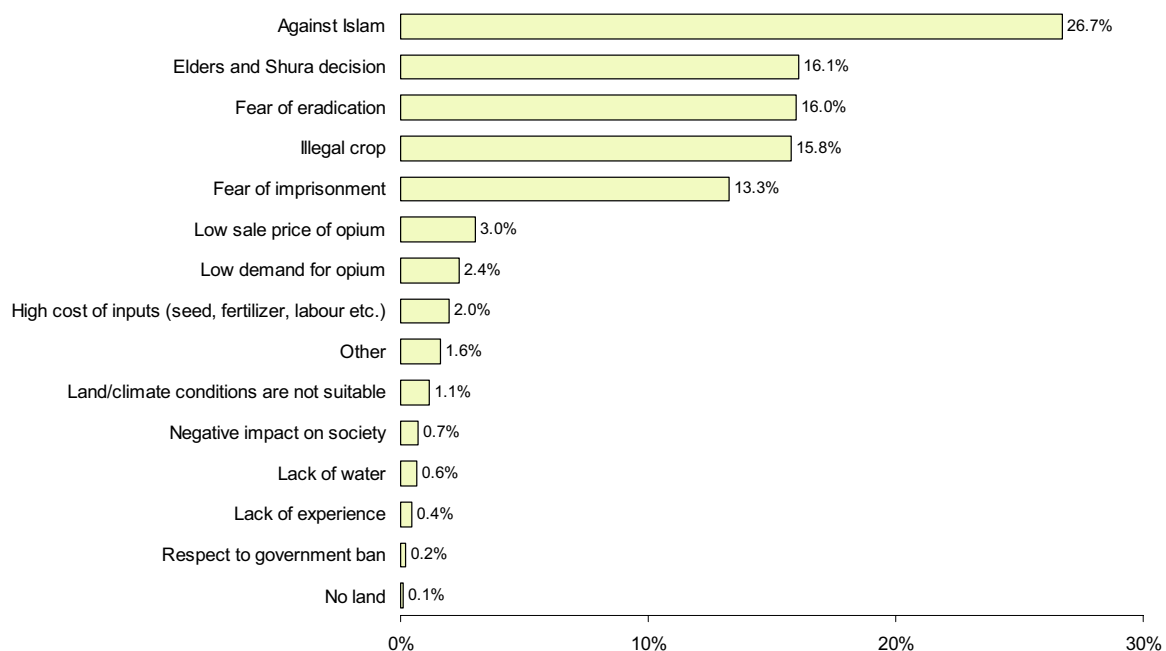
Figure 40: Reasons for stopping opium poppy cultivation (n=778 farmers from 1,500 villages)



Reasons for not cultivating opium poppy in 2007

Religion was the reason most commonly given by respondents (26.7 per cent) for not growing opium poppy in 2007. Decisions of the elders and the Shura were also regarded as important (16.09 per cent of respondents). Fear of eradication was cited by 15.9 per cent of respondents, while 15.78 per cent gave the reason that opium poppy is an illegal crop, and 13.28 per cent cited fear of imprisonment as the main reason influencing their decision.

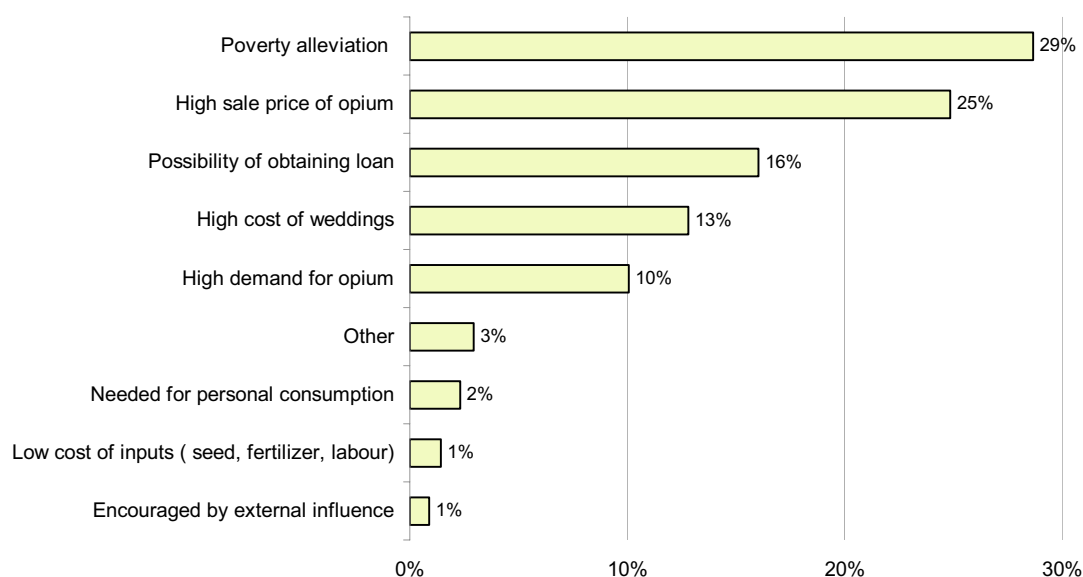
Figure 41: Reasons for not cultivating opium poppy in 2007 (n=2,272 farmers from 1,500 villages)



Reasons for opium poppy cultivation in 2007

28.6 per cent of farmers who cultivated opium poppy in 2007 gave “poverty alleviation” as their main reason for cultivation, while 24.86 per cent cited the high sale price of opium. Poverty was the main reason cited by opium poppy-growing farmers in the east (47 per cent). The high cost of weddings was cited as a reason by 12.81 per cent of respondents in this group, while 10 per cent gave high demand for opium as their main reason for cultivation (compared to 16.4 per cent in 2006). Demand for opium decreased in 2007 with respect to 2006, as reflected by opium prices. In the north, north-east, south and east, some farmers said that they needed the opium for personal consumption.

Figure 42: Reasons for opium poppy cultivation in 2007 (n=724 farmers from 1,500 villages)



2.11 Loans

Outstanding loans

It is important to understand the financial status of the farmers in order to understand the reasons for opium poppy cultivation and opium dynamics in the country. To that end, as part of the survey, farmers were asked whether they had any outstanding loans and whether they had taken out a new loan in 2007.

Of the 2,996 farmers who provided this information, 42 per cent reported having one or several outstanding loans (compared to 32 per cent in 2006). The average amount of outstanding loans per farmer was US\$ 753 in 2007, which is higher than in 2006 (US\$ 701). The average amount of outstanding loans was equivalent to approximately 2.5 times the per capita GDP in Afghanistan (US\$ 310) in 2007.

On average, opium poppy farmers owed more in outstanding loans (US\$ 998) than non-opium poppy farmers in 2007, which represents an increase of 13 per cent compared to 2006 (US\$ 884), although the proportion of farmers who had outstanding loans was lower among opium poppy-growers (39 per cent) than non-opium poppy-growers. Of those farmers who had never cultivated opium poppy, 40.4 per cent had outstanding loans, the average value of which was US\$ 654. The average value of outstanding loans held by farmers who stopped opium poppy cultivation before 2007 was US\$ 729. Farmers who did not cultivate opium poppy in 2007 on average owed US\$ 683 in outstanding loans, which was the highest amount owed by non-opium poppy growing farmers.

Table 38: Average outstanding loans held by farmers

	Opium poppy-growing farmers	Non-opium poppy growing farmers		
		Did not cultivate poppy in 2007	Stopped poppy cultivation before 2007	Never cultivated poppy
Average loan (US\$)	998	683	729	654
Percentage of farmers with loan	39.0%	43.1%	47.9%	40.4%

In 2007, 39 per cent of opium poppy-growing farmers had debts, compared to 21 per cent in 2006. There are pronounced regional differences in borrowing behaviour, both in terms of the average loan amount and the proportion of farmers obtaining loans. In central Afghanistan, 38 per cent of farmers had outstanding loans in 2007, the average value of which was US\$ 751. Farmers in the north-east owed the lowest average amount in outstanding loans (US\$ 520), whereas farmers in the south had the highest debts (US\$ 999).

Table 39: Average outstanding loans held by farmers, by region

Region	Average loan (US\$)	Percentage of farmers with outstanding loans
Central	751	38%
Eastern	911	47%
North-eastern	520	43%
Northern	694	40%
Southern	999	41%
Western	527	45%

In all regions, the average amount of outstanding loans was higher for opium poppy farmers than for farmers who did not cultivate opium poppy. The percentage of farmers with outstanding loans increased in all regions in 2007.

New loans

The average amount of new loans taken out in 2007 was US\$ 547 per farmer (both opium poppy-growing and non-opium poppy-growing farmers), 15 per cent less than in 2006 (US\$ 644). The average amounts for 2007 and 2006 are well below the 2003 level (US\$ 699).

The average value of new loans taken out by opium poppy-growing farmers in 2007 was US\$ 681, similar to the corresponding figure for 2006 (US\$ 680) and higher than that for new loans taken out by non-opium poppy-growing farmers.

Table 40: Average value of new loans taken out by farmers

	Opium poppy-growing farmers	Non-opium poppy-growing farmers		
		Did not cultivate poppy in 2007	Stopped poppy cultivation before 2007	Never cultivated poppy
Average loan value (US\$)	681	513	560	489
Percentage of farmers who took out a new loan in 2007	22.0%	20.0%	29.4%	29.4%

Some 35 per cent of farmers in central Afghanistan took out new loans in 2007, the average value of which was US\$ 576. This was the highest percentage of all the regions. The vast majority of farmers in central Afghanistan have never cultivated opium poppy, and most of the provinces in the region have been almost poppy-free to date. However, the high number of borrowers, together with the high average amount of loans, could encourage farmers in the central region to cultivate opium poppy in the coming seasons in order to repay those loans. The average amount of new loans taken out by farmers in the western region was the lowest (US\$ 318).

Region	Average loan (US\$)	Percentage of farmers with outstanding loan
Central	576	35%
Eastern	489	16%
North-eastern	339	31%
Northern	666	30%
Southern	787	21%
Western	318	32%

Sources of new loans

Shopkeepers and traders are the main source of new loans for farmers. 53.5 per cent of opium poppy-growing farmers reported to have obtained their loans from these sources. It is important to note that shopkeepers and traders are often involved in the opium business. The second most frequent source cited by respondents was fellow villagers, such as neighbours, headmen and Shura chiefs (22.6 per cent). Other sources included relatives and friends (21.4 per cent) and NGOs (2.5 per cent).

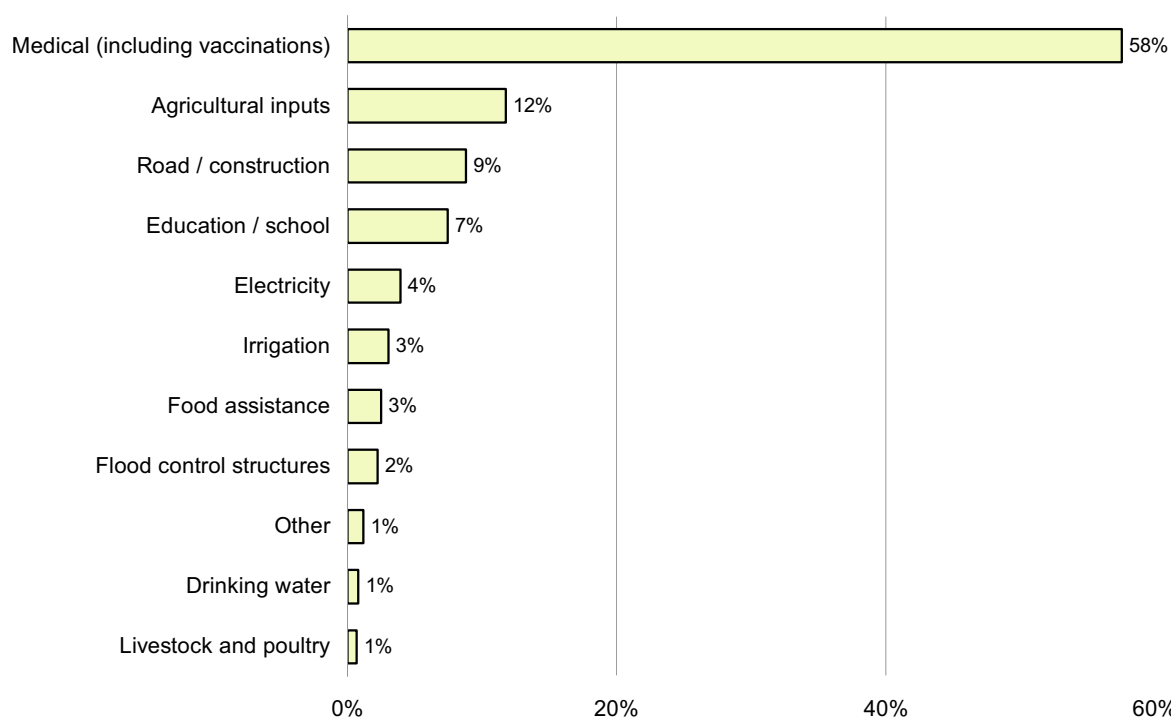
Table 41: Sources of new loans taken out by farmers

Loan source	Opium poppy-growing farmers	Non-opium poppy-growing farmers		
		Did not cultivate poppy in 2007	Stopped poppy cultivation before 2006	Never cultivated poppy
Shopkeeper/trader	53.5%	52.9%	57.2%	50.8%
Fellow villager	22.6%	11.4%	14.4%	9.8%
Relative/friend	21.4%	26.5%	26.6%	26.4%
NGO	2.5%	1.4%	0.9%	1.6%
Government credit	0.0%	7.7%	0.4%	11.4%
Unknown	0.0%	0.2%	0.4%	0.0%
Total	100%	100%	100%	100%

2.12 External assistance and farmers' expectations

Headmen in all surveyed villages were asked what type of assistance the village had received in 2006 and to what extent that assistance had met their expectations. Of the 1,500 villages that provided this information, the headmen of 1,242 villages (83 per cent) confirmed that those villages had received some form of external assistance in 2006. Most assistance took the form of medical assistance (58 per cent), followed by agricultural inputs (12 per cent), road/construction activities (9 per cent), school construction (7 per cent) and electricity (4 per cent).

Figure 43: External assistance interventions reported by headmen (n = 1,500 villages)



Of the 1,242 villages that received external assistance in 2006, 784 (63 per cent) did not cultivate opium poppy in 2007.

Table 42: External assistance and opium poppy status of villages as reported by headmen (n = 1,242 villages)

Assistance received in 2006	Opium poppy cultivation in 2007	
	No	Yes
No	35%	65%
Yes	63%	37%

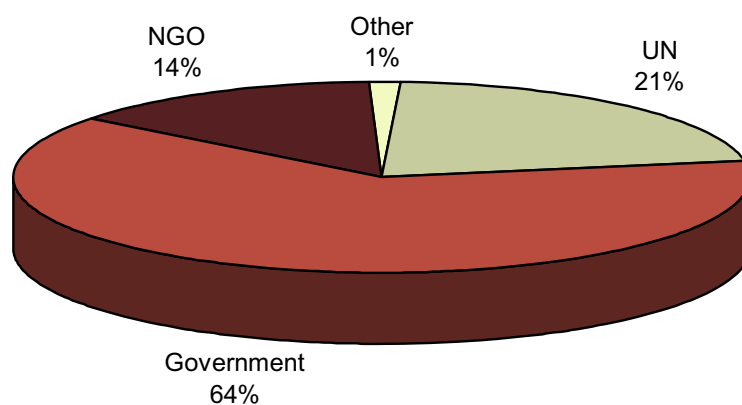
Only a small proportion of the assistance was reported from villages in the north-east region, while a large proportion was reported from villages in the south.

Table 43: External assistance provided to villages as reported by headmen, by region (n = 1,242 villages)

Region	% of receiving external assistance in total
Central	98%
Eastern	100%
North-eastern	99%
Northern	88%
Southern	57%
Western	69%
Total	100%

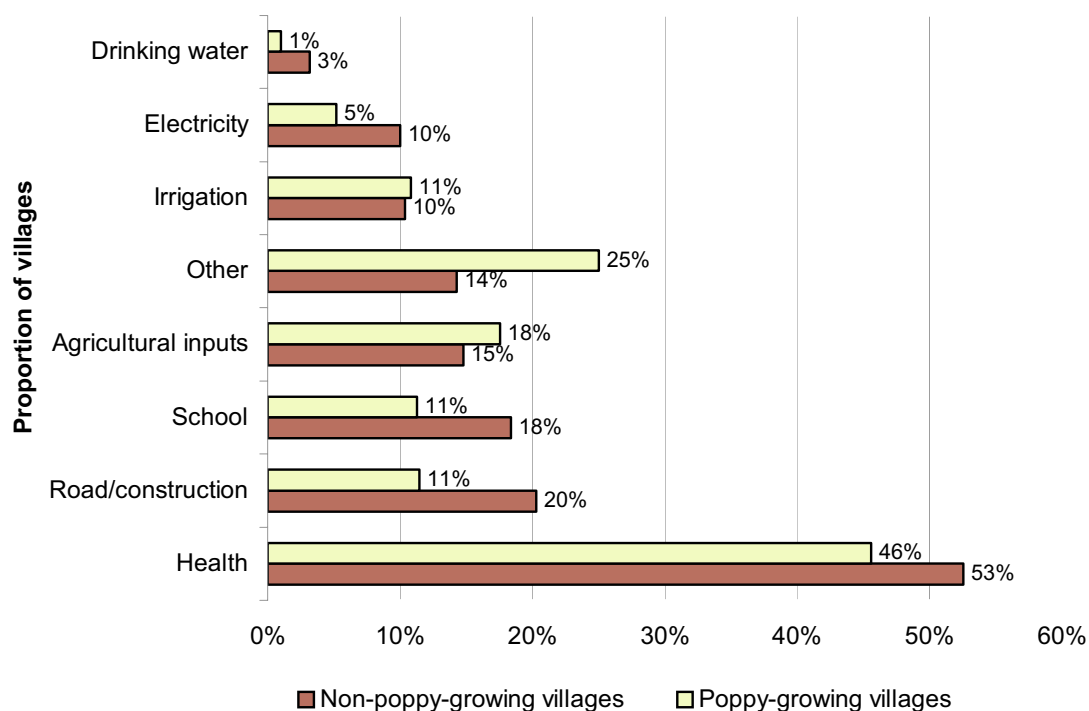
Thirty-eight per cent of villages that received external assistance in 2006 cultivated opium poppy; this figure remained unchanged in 2007. As in 2005 and 2006, it is very difficult to establish a link between external assistance and opium poppy-growing status. There was no difference in the type of external assistance provided to villages between 2005 and 2007. Both opium poppy-growing and non-opium poppy-growing villages received very little assistance in terms of electricity, irrigation and drinking water, as was the case in 2005 and 2006.

The Government was mentioned as the source of 64% of the assistance activities received by villages, followed by United Nations and NGOs.

Figure 44: Provision of external assistance

Only 19 per cent of the headmen interviewed reported that the assistance for the village received in 2006 met their expectations. Opium poppy-growing farmers received almost no assistance for alternative crop cultivation in 2006. The expectations of farmers concerning credit, opportunities to market their crops, employment and alternative crops were not met at all.

Figure 45: Expectations met by type of external assistance



2.13 Income generation for farmers

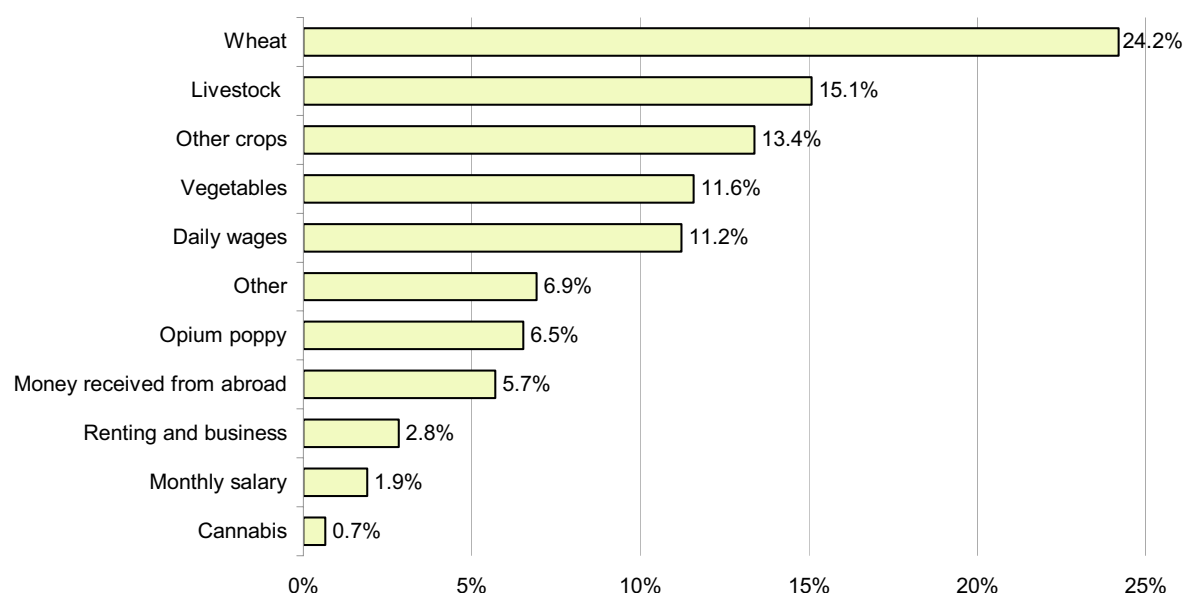
Village survey data on income earned in 2006 show that the average annual cash income of opium poppy-growing households in 2006 was 42 per cent higher than that of non-opium poppy-growing households.

Opium poppy-growing households in southern Afghanistan earned a much higher annual cash income than those in other regions. However, non-opium poppy-growing households in southern Afghanistan also reported higher incomes than those in other regions. The annual income of both opium poppy-growing and non-opium poppy-growing households was lowest in the west.

Of the six main opium poppy-growing provinces in 2007 (Hilmand, Kandahar, Uruzgan, Nimroz, Nangarhar and Farah), three (Farah, Nimroz and Nangarhar) reported lower cash income levels in 2006 than in 2005. The average annual household income in Hilmand, Kandahar and Uruzgan was at least double that of Farah, Nimroz and Nangarhar. In the poorest provinces of central and northern Afghanistan, the level of opium poppy cultivation in 2007 was negligible except in some parts of Badakhshan. This suggests that there is no a direct relationship between poverty and opium poppy cultivation.

Table 44: Annual cash income level of farmers, by opium poppy-growing status

Region	Average annual income of opium poppy-growing farmers in 2006 (US\$)	Average annual income of non-opium poppy-growing farmers in 2006 (US\$)	% difference between income of opium poppy-growing and non-growing farmers
Central	2 497	2 024	19%
Eastern	2 155	1 970	9%
North-eastern	2 843	2 187	23%
Northern	3 550	2 287	36%
Southern	5 654	3 864	32%
Western	1 802	1 535	15%
Overall	3 933	2 279	42%

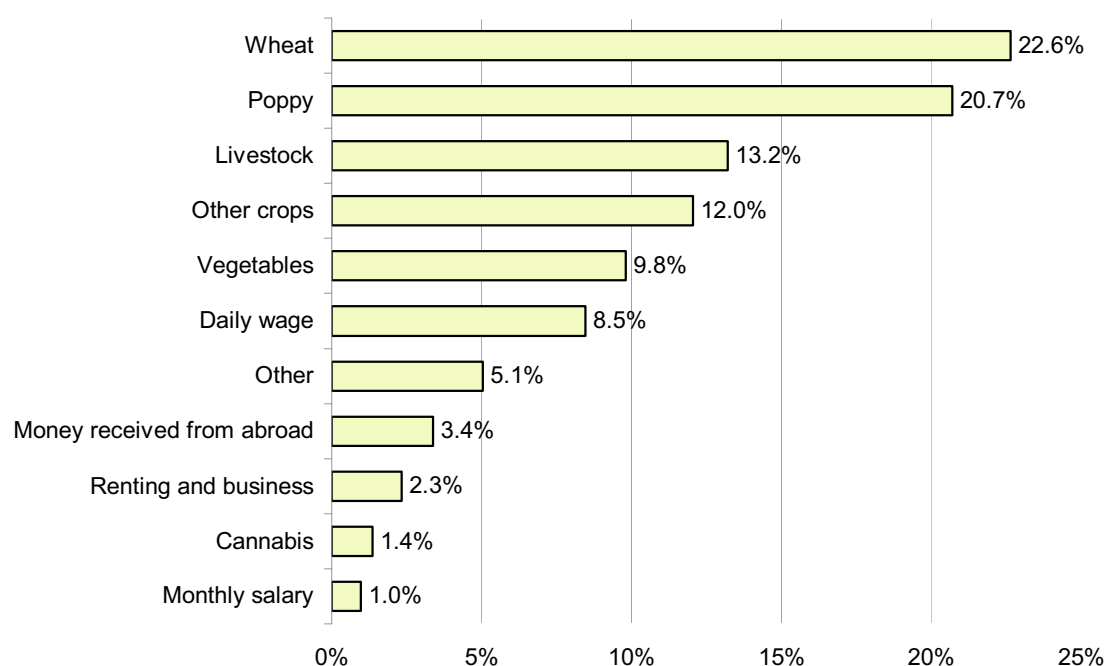
Figure 46: Source of income for farmers (n=2,296 in 1,500 villages)

The income reported by farmers in 2007 is the cash income derived by farmers from harvest of crops in 2006. The overall largest cash income for Afghan farmers is still from the production of wheat (24.2%), followed by income from livestock (15.1%). The proportion of the cash income derived from opium amounted – on average – to 6.5% of total income of farmers surveyed and is significantly higher than income from cannabis (0.7%). The importance of different sources of income differs from region to region. In the southern region the proportion of income derived from opium was 35.4% of the total income, which was the highest in Afghanistan. On the contrary, in the central region, the proportion of income from opium is only 0.7%. The proportion of income from opium was 13.8% in the north-eastern, 12.1% in the eastern, 6.1% in the northern and 9.9% in the western regions.

Table 45: Sources of cash income for all farmers, by region

Region	Cannabis	Daily wage	Livestock	Monthly salary	Other	Other crops	Opium	Money received from abroad	Renting and business	Vegetables	Wheat	Grand Total
Central	0.02%	12.2%	10.7%	2.5%	9.7%	7.4%	0.7%	21.7%	5.7%	8.9%	20.6%	100%
Eastern	0.03%	14.1%	17.1%	5.7%	5.9%	7.0%	12.1%	8.0%	6.0%	2.6%	21.3%	100%
North-eastern	0.04%	5.5%	15.8%	2.2%	2.4%	7.6%	13.8%	3.8%	2.5%	5.5%	40.9%	100%
Northern	0.13%	4.3%	11.9%	0.6%	4.0%	5.7%	6.1%	6.9%	2.1%	12.5%	45.7%	100%
Southern	1.58%	1.9%	4.2%	0.6%	4.5%	19.3%	35.4%	4.5%	2.6%	3.5%	21.9%	100%
Western	0.05%	7.5%	15.7%	1.5%	3.8%	6.0%	9.9%	14.1%	1.5%	5.5%	34.5%	100%

Figure 47: Source of income for opium poppy-growing farmers (n=724)



For opium poppy-growing farmers, a breakdown by region shows a different picture. In all regions, approximately half of the total income of these farmers stems from opium and wheat.

Table 46: Sources of cash income for opium poppy-growing farmers, by region

Region	Cannabis	Daily wage	Livestock	Monthly salary	Other	Other crops	Opium	Money received from abroad	Renting and business	Vegetables	Wheat	Grand Total
Central	0.0%	5.3%	9.5%	0.0%	3.2%	4.2%	17.3%	35.3%	8.0%	3.4%	13.7%	100%
East	0.0%	15.5%	15.0%	2.5%	5.2%	4.6%	30.2%	2.0%	4.6%	1.8%	18.7%	100%
North-east	0.0%	5.3%	14.3%	1.0%	1.3%	5.5%	37.9%	2.2%	1.0%	3.2%	28.3%	100%
North	0.0%	1.2%	3.2%	0.0%	0.8%	6.4%	25.7%	3.4%	0.6%	19.1%	39.6%	100%
South	1.2%	1.3%	3.1%	0.4%	3.0%	12.2%	53.8%	2.9%	3.1%	2.5%	16.6%	100%
West	0.1%	4.6%	7.8%	0.8%	1.3%	5.2%	34.6%	6.0%	0.5%	4.8%	34.3%	100%

2.14 Ethnic distribution

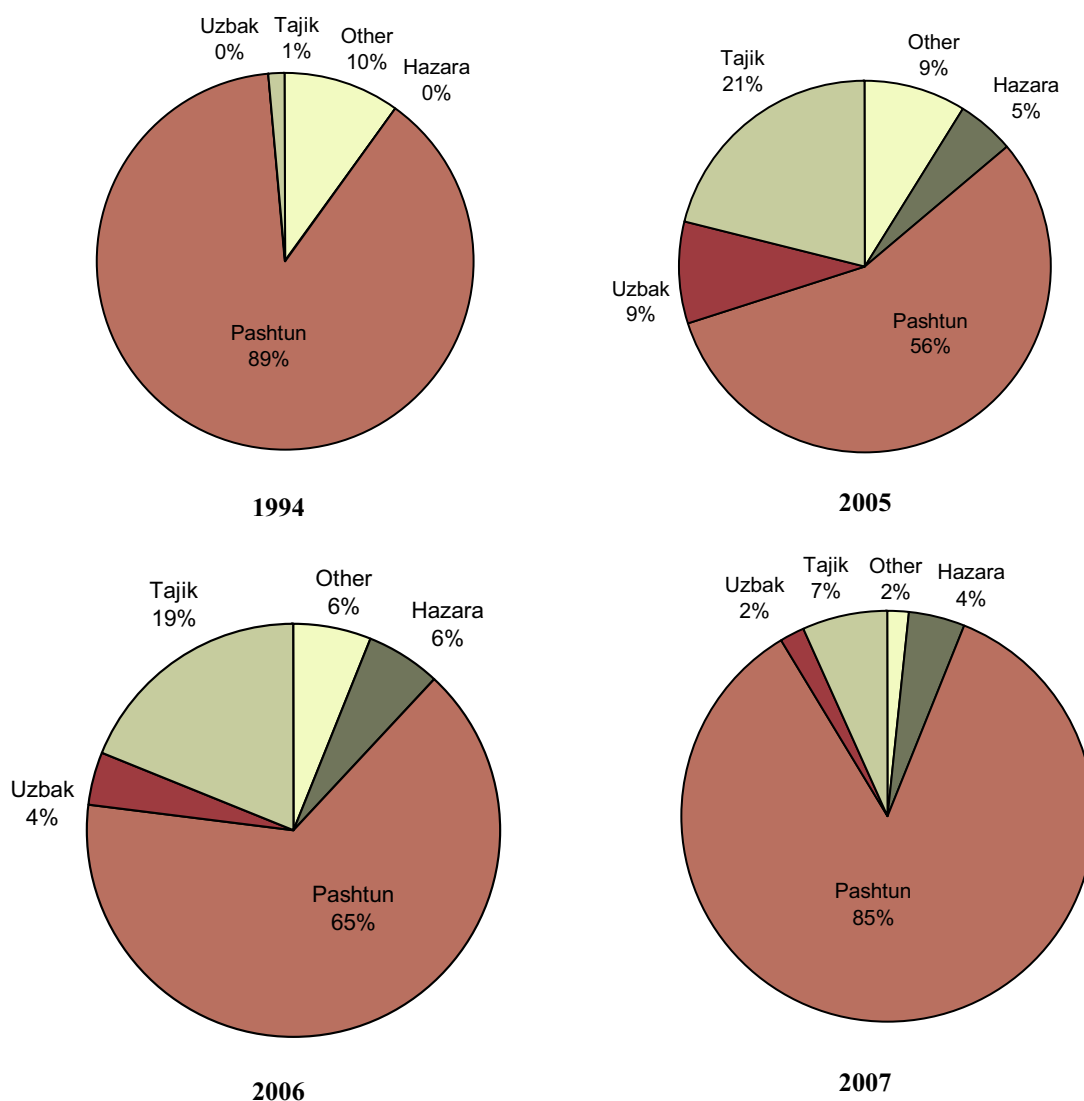
As part of the village survey, data was collected from village headmen in 1,500 villages on the ethnic and linguistic make-up of the surveyed population.

In terms of opium production, available data for 2007 shows that Pashtun farmers account for 85 per cent of the country's opium production, followed by Tajik/Dari-speaking farmers (six per cent), Hazara farmers (four per cent) and Uzbek farmers (two per cent).

A comparison with data collected in 1994 shows a clear increase in opium production among Tajiks, Uzbeks, Hazara and other ethnic groups up to 2006. The situation in 2007, however, was more or less similar to that in 1994, in that Pashtun farmers once again accounted for more than 80 per cent of opium production.

These results were obtained by distributing opium production by province according to the distribution of ethnic groups among the population in opium-producing villages. However, this is based on the assumption that the distribution of opium poppy farmers in villages of mixed ethnic composition is homogeneous, which is not necessarily the case. The percentages shown below as representing the ethnic distribution of opium poppy farmers must therefore be treated with caution.

Figure 48: Ethnic distribution of population in opium producing villages in 1994, 2005-2007



2.15 Opium prices

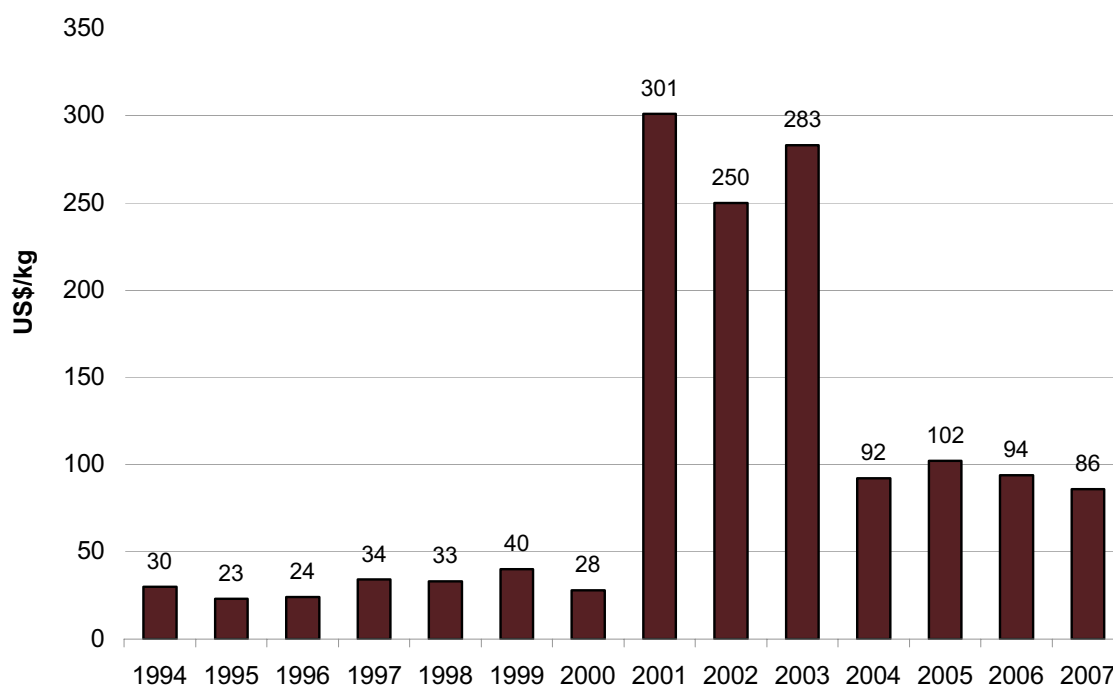
Based on interviews conducted in 1,500 villages, the average weighted fresh opium price in 2007 was calculated at US\$ 86/kg, compared to US\$ 94/kg in 2006. Fresh opium prices at harvest time were 9 per cent lower than in 2007.

Dry opium prices at harvest time decreased by 2 per cent to US\$ 122 (price weighted by production) in 2007, compared to US\$ 125/kg in 2006. This relatively small decrease is due to an increased proportion of the high price eastern region in total production in 2007, while the share in production of the low price northern and north-eastern regions fell.

Dry opium prices decreased in all regions due to the overall increase in opium production. Prices fell by 12 per cent in the eastern region, 9 per cent in the northern region and 17 per cent in the western region. Opium prices fell by only 6 per cent in the south, despite record production levels. The highest dry opium prices were reported in the eastern and central regions (US\$ 168 and US\$ 167, respectively). In 2005, opium prices in the east increased as the result of a dramatic fall in opium production. In 2007, substantial opium production in Nangarhar province resulted in much lower opium prices than in 2006.

In general, prices in the northern region are lower than in other regions because of the reportedly low morphine content of the opium produced in that region. A further reason is the high cost of transporting opium from north to south Afghanistan for heroin production and onward trafficking to other countries.

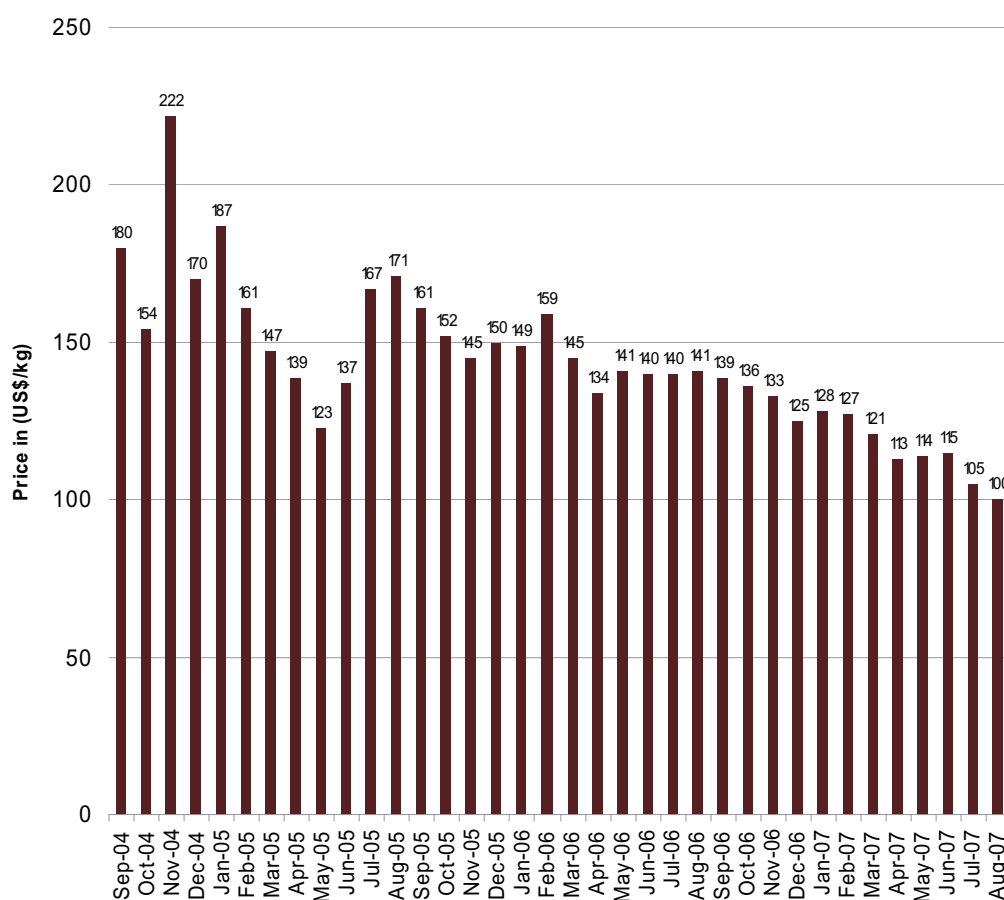
Figure 49: Fresh opium farm-gate prices at harvest time (US\$/kg weighted by production), 1994 – 2007



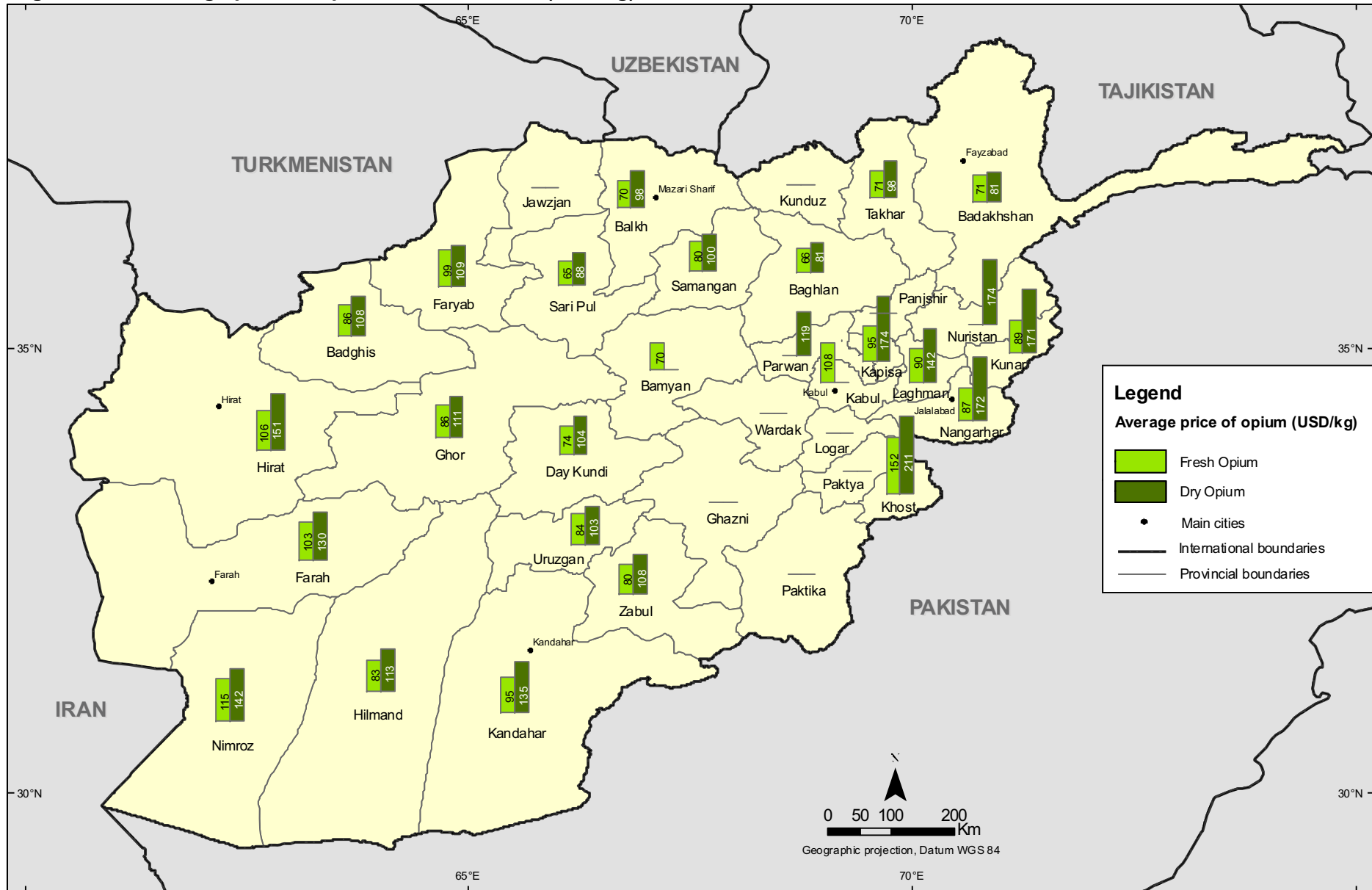
Sources: UNODC Opium Surveys, 1994–2007

Table 47: Farm-gate prices for opium at harvest time, by region (US\$/kg), 2007

Region	Average fresh opium price (US\$) in 2006	Average fresh opium price (US\$) in 2007	Change	Average dry opium price (US\$) in 2006	Average dry opium price (US\$) in 2007	Change
Central (Parwan, Paktya, Wardak, Khost, Kabul, Logar, Ghazni, Paktika, Panjshir)	151	124	-18%	207	167	-19%
Eastern (Nangarhar, Kunar, Laghman, Nuristan, Kapisa)	101	88	-13%	191	168	-12%
North-eastern (Badakhshan, Takhar, Kunduz)	79	71	-10%	125	86	-31%
Northern (Bamyan, Jawzjan, Sari Pul, Baghlan, Faryab, Balkh, Samangan)	77	71	-8%	99	90	-9%
Southern (Hilmand, Uruzgan, Kandahar, Zabul, Day Kundi)	99	85	-14%	122	115	-6%
Western (Ghor, Hirat, Farah, Nimroz, Badghis)	106	97	-8%	150	125	-17%
National average price weighted by production	94	86	-9%	125	122	-2%

Figure 50: Farm-gate prices for dry opium prices (US\$/kg) between September 2004 and August 2007

Afghanistan: Average price of opium at harvest time (USD/kg), 2007



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

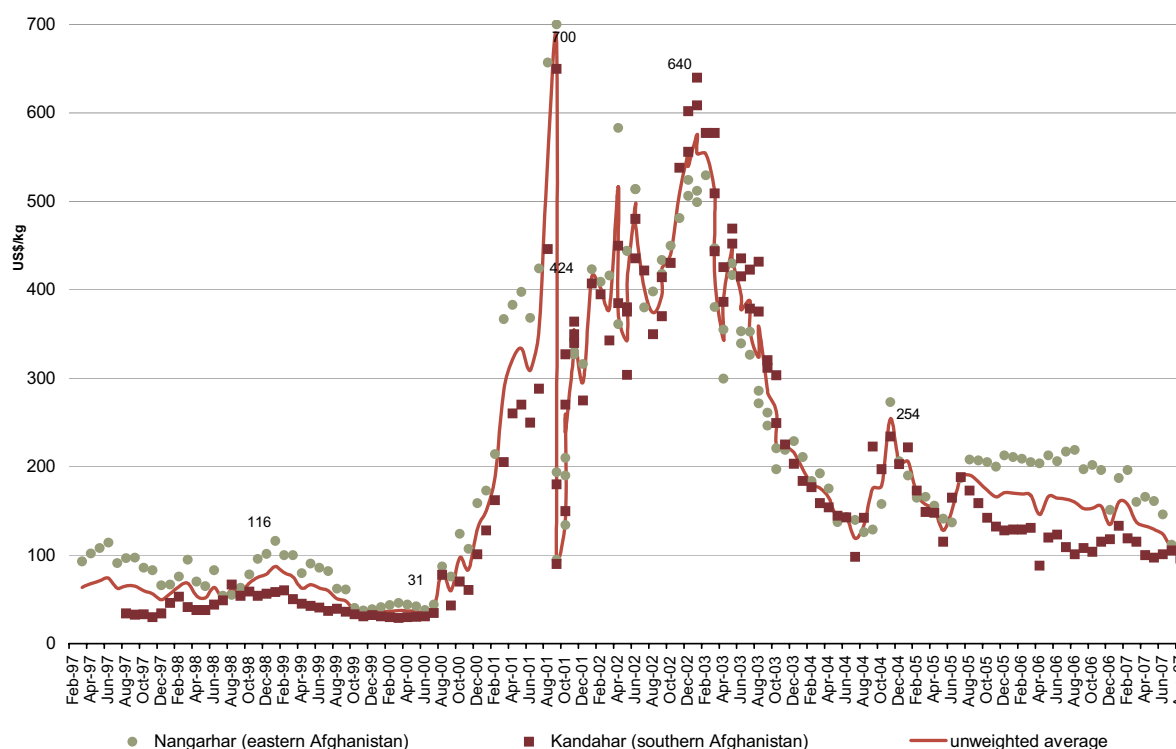
Monthly opium prices have been collected regularly by UNODC since 1997 in selected parts of Nangarhar (eastern region) and Kandahar (southern region) as part of the opium poppy survey in Afghanistan. In recent years, prices have also been collected monthly in Badakhshan, Balkh, Hilmand and Hirat, both from opium poppy farmers and from local opium traders. The provinces of Faryab, Takhar, Kunduz, Ghor, Farah, Laghman, Kunar and Nimroz provinces were recently included in this price monitoring system. Opium prices are currently collected in 14 provinces.

At the end of August 2007, the average price for one kilogram of dry opium in Afghanistan at the farm-gate level was US\$ 111. Overall, dry opium prices decreased by 23 per cent between August 2006 and August 2007 at the trader level. A breakdown by region shows a general decreasing trend in opium prices. Prices fell sharply in the east (50 per cent), north-east (69 per cent) and north (13 per cent), but decreased only slightly in the west (by 1 per cent) compared to August 2006.

Table 48: Farm-gate and trader prices for dry opium (US\$/kg), August 2006 and August 2007

Region	Regional average price (US\$/kg) / August 2006		Regional average price (US\$/kg) / August 2007		Trader change
	Farm-gate	Trader	Farm-gate	Trader	
Eastern (Nangarhar, Kunar, Laghman)	209	210	103	105	-50%
Southern (Hilmand, Kandahar)	94	101	89	96	-5%
Western (Hirat, Ghor, Farah, Nimroz)	124	133	119	132	-1%
North-eastern (Badakhshan, Takhar)	135	147	43	46	-69%
Northern (Balkh, Faryab, Kunduz)	123	125	108	109	-13%
Average	140	144	105	111	-23%

Figure 51: Prices of dry opium in Nangarhar and Kandahar provinces collected from traders (US\$/kg) - March 1997 to August 2007



2.16 Migration

Migration to surveyed villages

Village headmen were asked about the extent of and reasons for migration to their respective villages. A total of 3,254 families moved to the surveyed villages, which corresponds to 14 persons per village. More than half of migrants (57 per cent) moved to non-opium poppy-growing villages and the remainder (43 per cent) to opium poppy-growing villages.

1,457 families moved to villages in the Northern Region, and less than half (33 per cent) to opium poppy-growing villages. Of the 760 families who moved to the Southern Region, 86 per cent chose opium poppy-growing villages, whereas some 63 per cent of families who moved to the Eastern Region preferred non-opium poppy-growing villages.

Figure 52: Distribution of immigration, by region

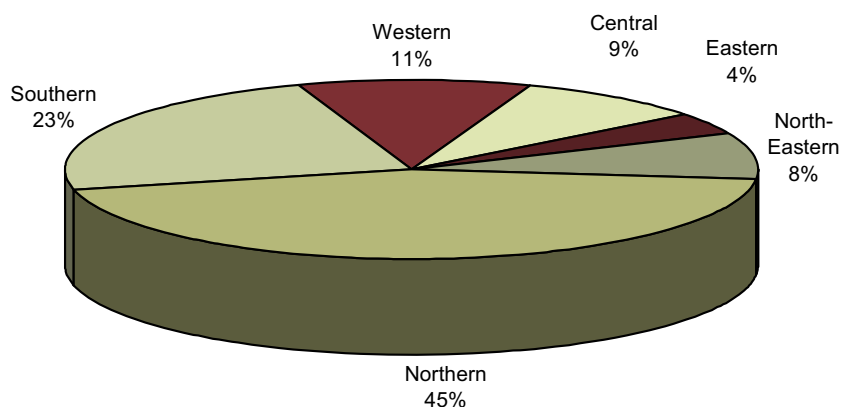
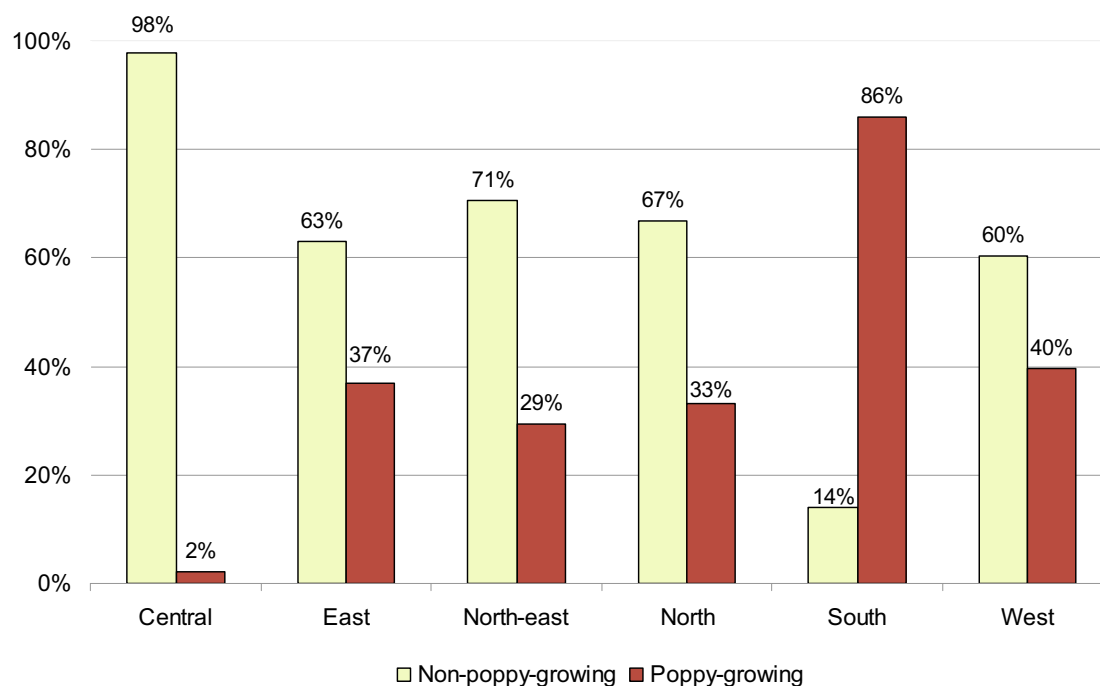
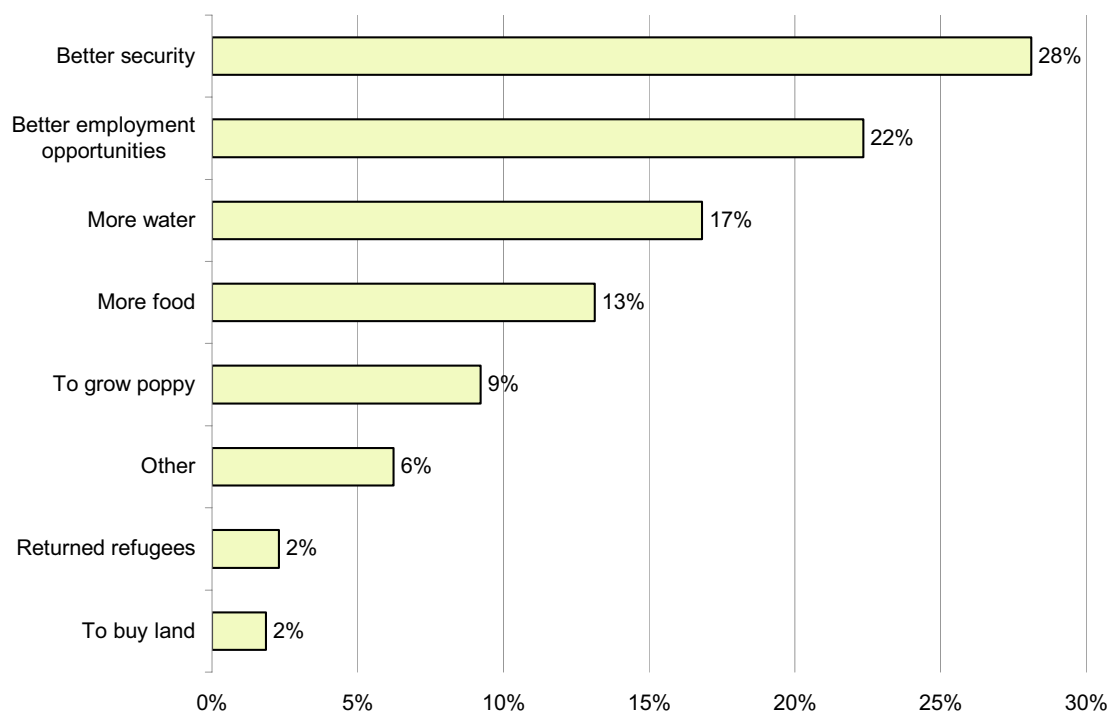


Figure 53: Immigration to opium poppy-growing and non-opium poppy-growing villages (by destination region)



In 2007, majority of immigration was because of concern towards security and better employment opportunities.

Figure 54: Reasons for immigration (n=1,500 villages)

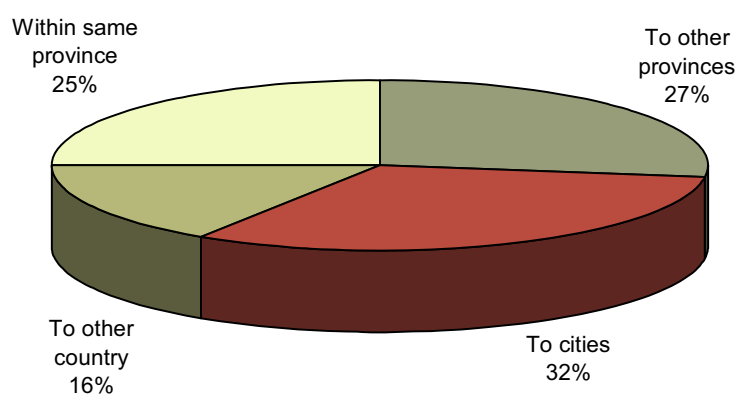


Migration from surveyed villages

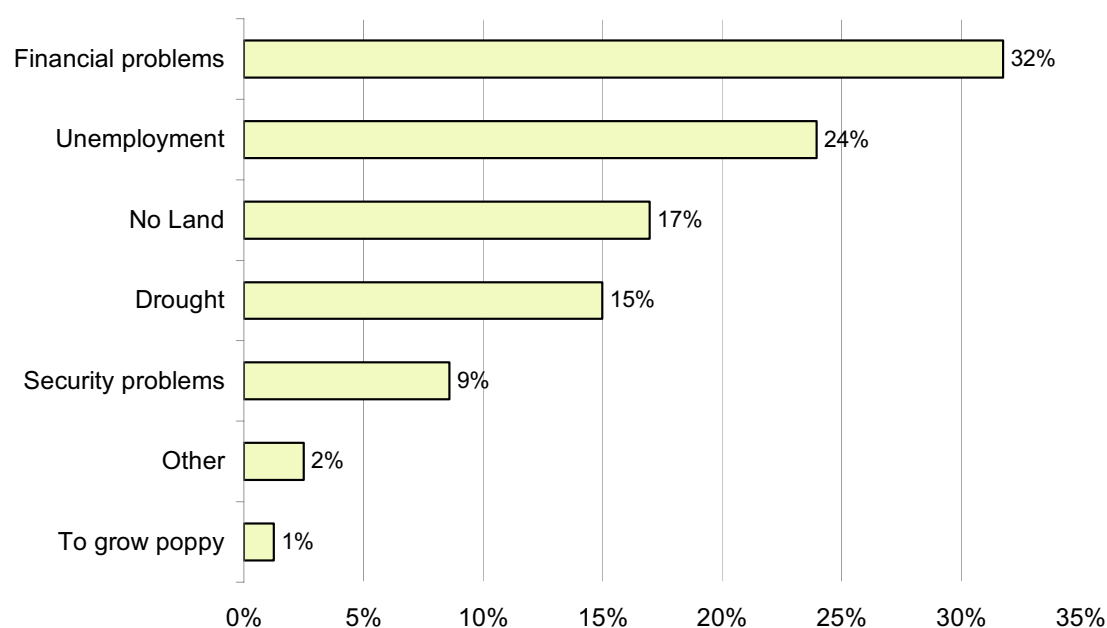
In 2007, a total of 9,508 families moved from the surveyed villages to other districts in the same province, other provinces, other cities or other countries. This corresponds to an average of six families or approximately 40 persons per village. A total of 4,267 families (45 per cent) migrated from opium poppy-growing villages and the remainder from non-opium poppy-growing villages.

The majority of these migrants moved to cities (32 per cent); 27 per cent moved to other provinces, 25 per cent to another location in the same province and 16 per cent to another country.

Figure 55: Migration destinations preferred by villagers (n=1,500)



Financial problems (32 per cent), unemployment (24 per cent), no land (17 per cent) and drought (15 per cent) were the main reasons for migration from the surveyed villages. Only one per cent of farmers migrated in order to cultivate opium poppy elsewhere.

Figure 56: Reasons for migration from surveyed villages (n=1,500 villages)

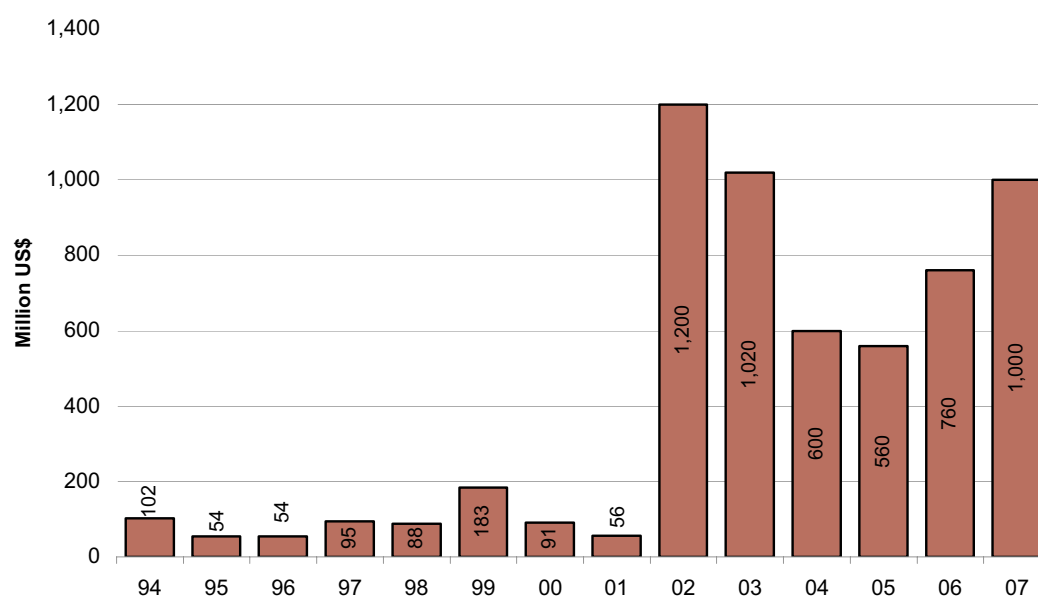
2.17 Estimated value of opium production and income of opium poppy-growing farmers

Based on opium production estimates and reported opium prices, the farm-gate value of the opium poppy harvest can be estimated at around one billion United States dollars (90 per cent confidence interval: US\$ 910 to 1,090 million). Farmers in southern region accounted for almost 66 per cent of total income from opium production.

Table 49: Farm-gate value of opium production in 2007

Region	Production of dry opium, in metric tons	Price of dry opium per kg (US\$)	Farm-gate value (US\$ millions)
Southern	5 745	115	661
Eastern	1 084	168	182
Western	959	125	120
Northern	233	90	21
North-eastern	195	86	17
Central	26	167	4
Rounded total	8 200	122	1 000
Rounded 90% confidence interval	7,530 - 8,960	119 - 125	910 - 1,090

Given the sharp increase in opium production (34 per cent), the overall farm-gate value of opium was some 32 per cent higher than in 2006. This higher level of production, however, has not had – so far – a significant impact on prices, which fell by only 2 per cent. The significant increase in income earned by farmers was therefore the result of greater opium production. In 2007, farmers' income reached its third highest level recorded in Afghanistan's history and the highest since 2003.

Figure 57: Estimated value of opium production at farm-gate level in Afghanistan, 1994 – 2007

At one billion United States dollars, the gross income earned by farmers through opium poppy cultivation in 2007 was equivalent to around 13 per cent of GDP, compared to 11 per cent in 2006. Farmers in Hilmand earned around US\$ 537 million, 54 per cent of the total income for farmers in Afghanistan in 2007.

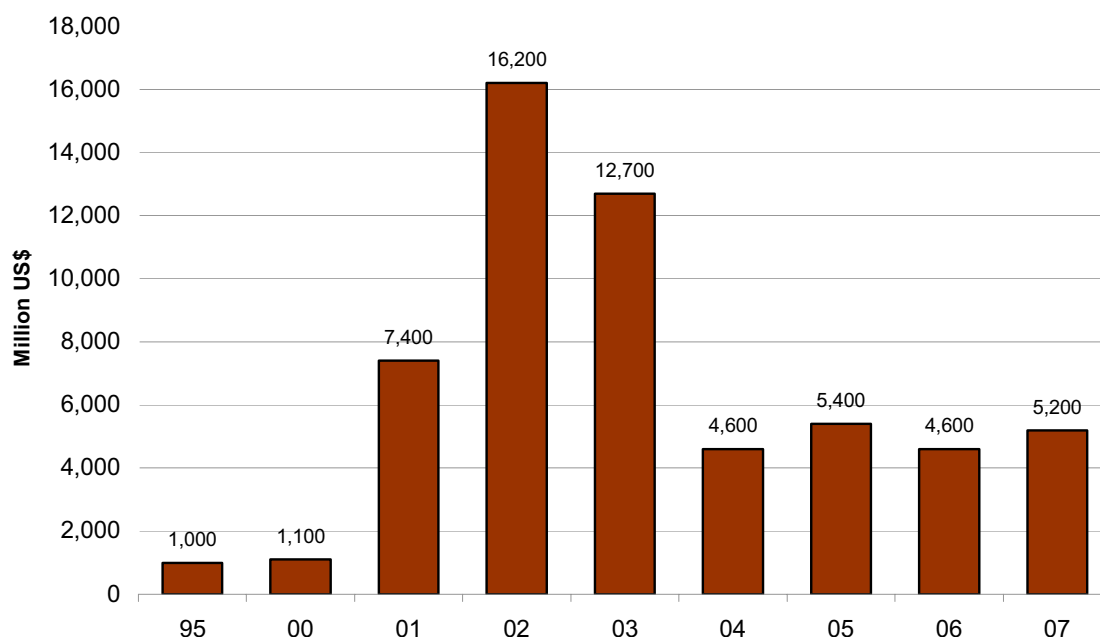
Reflecting lower prices and the higher number of families involved in opium poppy cultivation, the average gross income of opium poppy-growing households was US\$ 1,965, 16 per cent higher than in 2006 (US\$ 1,700). The average gross income in 2003, when opium prices were substantially higher, was \$3,900. While the average gross per capita income of members of opium poppy-growing families increased to US\$ 303, compared to US\$ 260 in 2006, it remained much lower than in 2003 (US\$ 600).

Table 50: Average family and per capita income of opium poppy-growing families from opium production, 2003–2007

	2003	2004	2005	2006	2007
Gross income in US\$ millions	US\$ 1 020	US\$ 600	US\$ 560	US\$ 760	US\$ 1 000
Estimated number of opium poppy farmers	264 000	356 000	309 000	448 000	509 000
Average annual income per opium poppy farmer	US\$ 3 864	US\$ 1 685	US\$ 1 813	US\$ 1 696	US\$ 1 965
Rounded	US\$ 3 900	US\$ 1 700	US\$ 1 800	US\$ 1 700	US\$ 2 000
Number of farmers and members of their families	1 716 000	2 314 000	2 008 500	2 912 000	3 308 500
Per capita income of opium poppy-growing families	US\$ 594	US\$ 259	US\$ 279	US\$ 261	US\$ 303
Rounded	US\$ 600	US\$ 260	US\$ 280	US\$ 260	US\$ 300

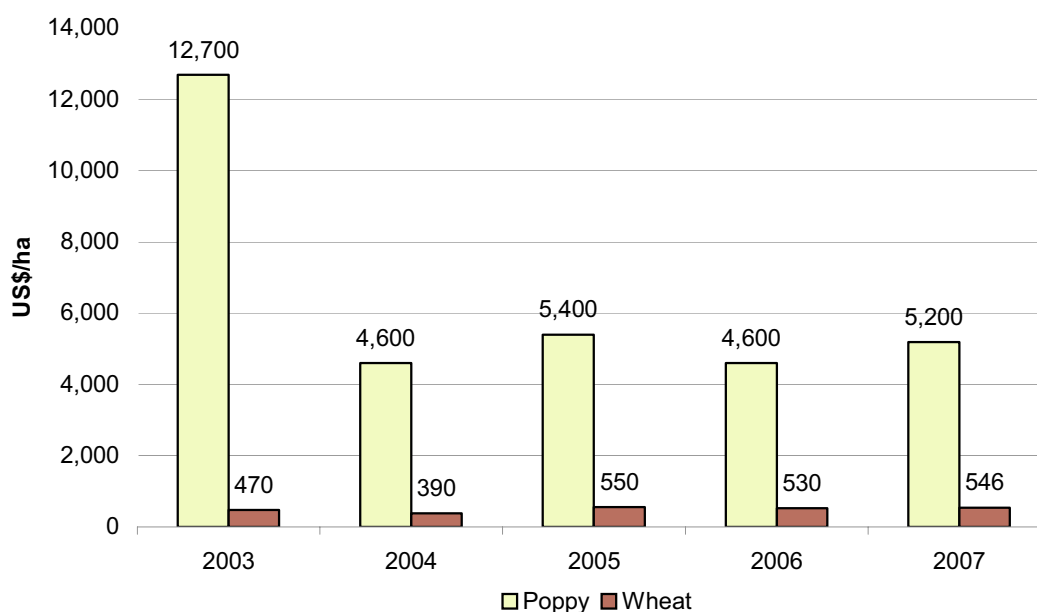
Gross income from opium poppy cultivation per hectare was US\$ 5,185 (based on a yield of 42.5 kg of dry opium per ha × price of US\$ 122 per kg of dry opium). The income from one hectare under opium poppy cultivation was much higher than in 2006 (US\$ 4,600), though lower than in 2005 (US\$ 5,400), reflecting lower prices. On average, an opium poppy growing family cultivated 0.37 hectares of opium poppy in 2007.

Figure 58: Gross income from opium poppy cultivation per hectare (US\$)



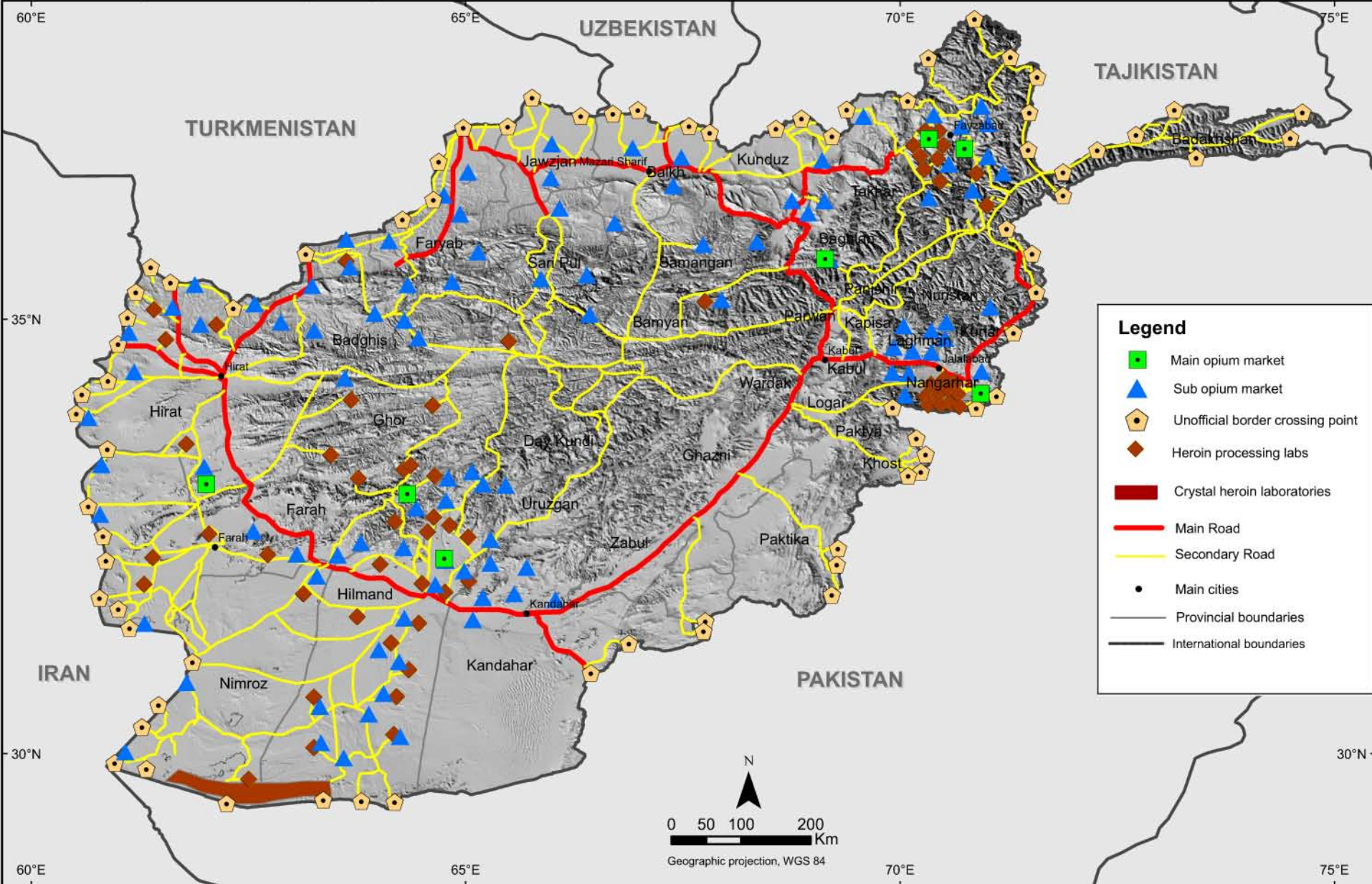
The difference between gross income per hectare of wheat as compared to that per hectare of opium poppy remained significant (ratio of 9.5 : 1), but lower than a few years ago. While in 2003 farmers earned 27 times more in gross income per hectare of opium poppy than per hectare of wheat, that ratio fell to 12 in 2004, 10 in 2005 and 9 in 2006. This comparison is based on gross income from opium per hectare of opium poppy and gross income from wheat per hectare of irrigated wheat. It does not take into account other possible income opportunities, e.g. from selling poppy or wheat straw.

Figure 59: Gross income of opium poppy and wheat (US\$/ha), 2003 – 2007



Sources: UNODC/Food and Agriculture Organization (FAO)/World Food Programme (WFP).

Heroin and opium trafficking in Afghanistan



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

2.18 Potential Value and income to the Afghan economy

The potential value of Afghanistan's 2007 opium harvest for the Afghan economy (accruing to farmers, laboratory owners and Afghan traffickers) was calculated to have reached about US\$4 billion (90% confidence interval: US\$ 3.5-4.5 billion), up from US\$3.1 billion in 2006 and \$2.7 billion in 2005. The increase was about 29% and thus slightly less than the increase in production (34%) – reflecting falling opium prices in neighbouring countries as Afghan drug exports increased. As compared to the year 2000 (US\$0.9 bn), the overall opium related income for the Afghan economy was more than four times higher. UNODC calculations suggest that Afghan traffickers earned US\$1.7 billion (Table 51) in opium exports (as compared to US\$1.2 billion in 2006) and 2.3 billion in heroin and morphine exports (as compared to 1.9 billion a year earlier).

The calculation of the potential national income from opium production is based on the value of opiates exports at prices in the border areas of neighbouring countries. This approach is based on the observation that Afghan traffickers are heavily involved in shipping opiates across the borders, but from there onwards traffickers from neighbouring countries usually take over the drug shipments. The methodology for calculating the overall gross income estimates from opium production for the Afghan economy was first developed in UNODC's report on *The Opium Economy in Afghanistan – An International Problem (New York 2003)* and repeated in subsequent years in the annual opium survey report. A number of variables (production, extent and degree of involvement of Afghan traffickers in shipping opiates abroad, proportion of the transformation of opium into heroin & morphine in Afghanistan, conversion rate of opium into heroin, number of identified laboratories in Afghanistan, information on drug trafficking flows within Afghanistan, prices in the main export markets etc.) have been taken into account to arrive at the estimates.

The average export price of opium obtained by Afghan traffickers in neighbouring countries in the border regions with Afghanistan amounted to around \$525 per kilogram in 2007 (down from \$633 in 2006 and \$890 in 2005), reflecting rising levels of opium exports. The average export price of heroin in the border regions of neighbouring countries with Afghanistan amounted to \$3,394 in 2007 (down from 3,860 in 2005 and 4,170 in 2004).¹⁶

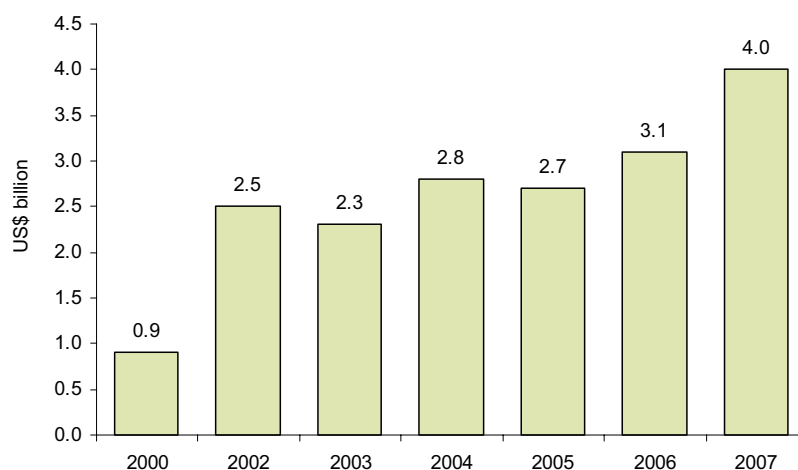
Data suggest that the decline in opium prices (-41% as compared to 2005) was more pronounced than the decline in heroin prices (-12%). The strong rise in the number of dismantled heroin laboratories in recent years may have contributed to the less significant increases in heroin exports as compared to opium exports. UNODC estimates that opium exports from Afghanistan increased by 68% in 2007 while morphine & heroin exports increased by 'just' 20%.

Table 51: Estimate of Afghan gross income from the opium sector in 2007

	Opium exports	Opium prices (wholesale) per kg	Opium distribution based on opium production, trafficking flows and seizures	Heroin & morphine exports	Heroin prices (wholesale) per kg	Heroin & morphine distribution based on opium production, labs and trafficking flows	Total
Total exports in tons	3,322 mt			666 mt			
Iran		\$ 600.0	79.3%		\$ 3,000	29.6%	
Pakistan		\$ 174.8	12.9%		\$ 3,206	51.1%	
Central Asia		\$ 325.0	7.4%		\$ 4,500	19.4%	
China		\$ 870.0	0.4%				
Average export price weighted by distribution		\$ 526			\$ 3,395		
Value in billion US\$ (exports in kg × export price in \$)	US\$ 1.7 bn			US\$ 2.3 bn			US\$ 4.0 bn

¹⁶ The average export price of heroin and morphine in 2006 amounted to US\$ 3,300 per kilogram and was thus slightly lower than the price data for 2007. Given differences in price data collection in the countries neighbouring Afghanistan it would be, however, misleading to interpret this as any price increase in 2007.

Figure 60: Potential income from opium production, 2000-2007 (gross income for farmers and Afghan traffickers)



Sources: UNODC, *The Opium Economy in Afghanistan*, UNODC, *Afghanistan Opium Survey 2003, 2004, 2005, 2006 and 2007*.

A comparison with the size of the licit economy is complicated by the fact that there are still discrepancies regarding the size of the licit gross domestic product (GDP) in Afghanistan.

The overall potential value-added of the opium sector for Afghanistan in 2007, expressed as a percentage of licit GDP (US\$7.5 billion according to estimates by the Afghanistan Central Statistical Office for the Afghan year 1385, i.e. March 2006 to March 2007), would have been equivalent to 53% of licit GDP (up from 45% in 2006, based on a GDP estimate of US\$6.9 bn for the year 1384, i.e. March 2005 to March 2006).

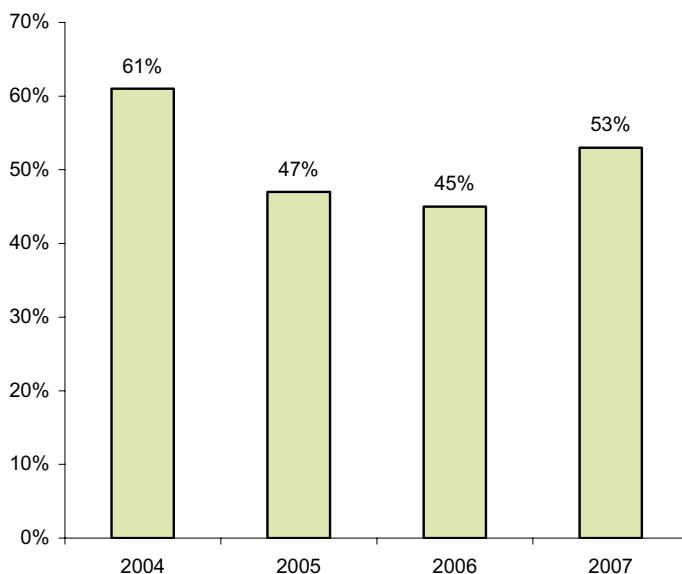
Based on GDP estimates provided by the International Monetary Fund (8.4 billion for 2006 and a forecast of 9.9 billion for 2007)¹⁷, the size of the opium sector in the Afghan economy would be equivalent to 40% of GDP in 2007, up from 37% in 2006. Irrespective of whether the GDP estimates are based on calculations by the Afghan Central Statistical Office (CSO) or the International Monetary Fund (IMF), data suggest that the proportion of the opium economy increased in 2007 as compared to a year earlier.

However, data also indicate that the importance of the opium sector is still lower than a few years ago. Based on CSO data, the importance of the opiate sector declined from being equivalent to 61% in of licit GDP in 2004 to 53% in 2007. Based on IMF data¹⁸, the ratio of ‘opium economy to licit GDP’ fell from 61% in 2002 to 47% in 2004 and to 40% in 2007. In other words, the Afghan economy – also due to external assistance - has been growing faster than the opium sector in recent years. Unfortunately, this positive trend has not continued in 2007.

¹⁷ International Monetary Fund, *World Economic Outlook Database*, April 2007.

¹⁸ International Monetary Fund, *World Economic Outlook Database*, April 2007.

Figure 61: The Afghan opiate industry compared with official licit economy, 2004-2007 (% of licit GDP)*

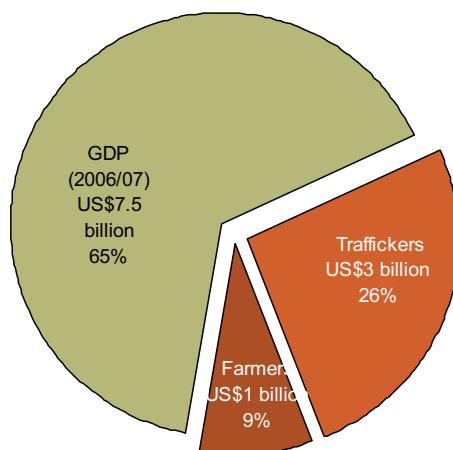


* Comparisons with official GDP data reported (e.g. for 2007: GDP over the March 2006-March 2007 period). Sources: Afghanistan Central Statistical Office (CSO) and UNODC / Ministry of Counter Narcotics, Afghanistan Opium Surveys 2007 and previous years.

The main beneficiaries from opium production in Afghanistan have been - once again - the drug traffickers. About US\$3 billion or 75% of the total were reaped by traffickers (including laboratory owners) while Afghan farmers earned US\$1 billion or 25% of the total. While overall income increased, the proportions remained roughly unchanged as compared to a year earlier. Overall opium related income of farmers increased by US\$0.2 billion or 32% in 2007. The rise in trafficker’s income was slightly lower (29%) though in absolute terms the increase was with US\$0.7 billion significantly higher than the farmers’ increase.

A significant proportion of the traffickers’ gross income of some US\$3 bn is thought to be in the hands of war lords, organized crime groups and partly also in the hands of the insurgency. The total amount of traffickers’ income was equivalent to 26% of the total Afghan economy or 40% of the licit Afghan economy (\$3bn/\$7.5bn).

Figure 62: Licit economy and opiate industry in Afghanistan in 2007



Sources: Afghanistan Central statistical Office (CSO) and UNODC, 2007 Afghanistan Opium Survey.

3 METHODOLOGY

This chapter covers various methodological aspects such as estimations of the extent of opium poppy cultivation, opium yield and production and opium prices. It also covers socio-economic aspects, such as the number of families involved in opium poppy cultivation, reasons for cultivation/non-cultivation of opium poppy and the income from opium earned by farmers and traffickers. The survey methodology was based on a sampling approach that combined the use of satellite imagery and extensive field visits. The methodology used in the survey on opium poppy eradication verification is also described in this chapter.

As part of capacity-building activities within MCN in 2007, Afghan nationals (UNODC and MCN staff) were trained in the visual interpretation of satellite data, and opium poppy fields were identified by visual interpretation using IKONOS data of one-metre resolution.

3.1 Opium poppy cultivation

A remote sensing approach has been used by UNODC since 2002 to monitor the extent of opium poppy cultivation in the main opium poppy-growing areas of Afghanistan. Satellite imagery supported by good ground reference information offers a reliable and efficient tool for the estimation of opium poppy cultivation and minimizes the security problems faced by surveyors in the field.

In 2007, high-resolution satellite images were acquired for 118 sample locations covering 24 provinces. All locations were covered at two different growth stages of opium poppy: at the flowering or capsule stage and after lancing of opium poppy capsules. These images covered 11 per cent of all agricultural land (716,100 ha) in the 24 provinces, an area greater than that covered in 2004, 2005 or 2006. In 2006, 210 images collected at 105 locations were processed to provide coverage of 19 provinces, covering 16 per cent of agricultural land. In 2005, 190 images collected at 79 sample locations were processed to provide coverage of 15 provinces, covering 214,000 ha of agricultural land, whereas in 2004, only 112 images collected at 56 sample locations were processed to provide coverage of 10 provinces, covering 131,000 ha of agricultural land.

In 24 provinces, satellite data was the sole data source used to estimate the area under opium poppy in 2007. In the remaining 10 provinces, opium poppy cultivation was estimated on the basis of assessments by surveyors of the extent of opium cultivation in sampled villages.

Establishment of the sampling frame for satellite image selection

The sampling frame was established by extracting the area of land potentially available for opium poppy cultivation in 24 provinces. Arable land was delineated from Landsat-7 images taken in 2002 and 2003 and subsequently updated using 2006 Landsat-7 ETM images. In 2006, an agricultural map of Afghanistan was prepared by visual interpretation of Landsat-7 ETM data. This provided updated statistics of land under cultivation in 2006. Agricultural statistics for the entire country had not been updated since 1993. The arable land in the sampling frame mostly covers irrigated areas, except in Badakhshan province, where rain-fed land is also included. The total area of arable land in the 24 provinces was 64,888 km², which is equivalent to 86 per cent of all irrigated agricultural land in Afghanistan.

The area under opium poppy cultivation was interpreted using high-resolution (10x10 km) IKONOS images. Locations for these images were randomly selected from a 10x10 km grid that was overlaid on the map of arable land. Cells containing less than one per cent of arable land were removed in order to cover the maximum area of arable land with a minimum number of cells. The final sampling frame consisted of 1,993 cells in 24 provinces. Optimization of the sampling frame reduces the probability of selecting a cell containing marginal areas of arable land, which ensures optimal use of the high-resolution satellite images.

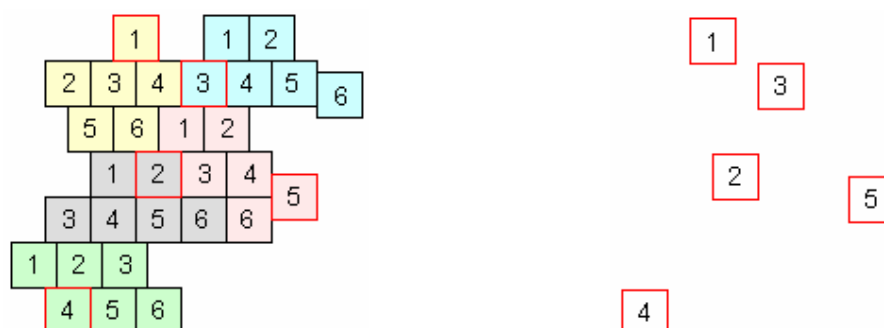
Sample selection

For each selected cell, IKONOS images were acquired for the pre-harvest and the post-harvest periods, which facilitated discrimination of opium poppy from other crops. Given the available budget, the total number of IKONOS images was limited to cover 118 locations (236 multi-spectral images) evenly distributed over 24 provinces. That distribution was based on the number of cells in the sampling frame and the total area of arable land in each province.

Table 52: Agricultural land sampled, by province

Province	Total arable land (km ²)	Total	Selected	% of selected cells over total cells	Arable land in selected cells (km ²)	Sample size (% of arable land in selected cells)
		# cells	# cells			
Badakhshan	4 619	52	6	12%	262	6%
Badgish	5 663	106	4	4%	282	5%
Baghlan	2 507	110	4	4%	63	3%
Balkh	6 409	70	8	11%	3 740	58%
Day Kundi	699	56	5	9%	62	9%
Farah	873	132	5	4%	69	8%
Faryab	7 946	108	5	5%	466	6%
Ghor	1 525	184	6	3%	41	3%
Hilmand	2 857	115	12	10%	427	15%
Hirat	6 003	223	3	1%	78	1%
Jawzan	3 181	43	4	9%	169	5%
Kandahar	1 693	121	9	7%	289	17%
Kapisa	360	8	1	13%	16	4%
Khost	604	24	3	13%	4	1%
Kunar	293	28	4	14%	40	14%
Laghman	244	23	3	13%	18	8%
Nangarhar	1 132	53	9	17%	296	26%
Nimroz	635	55	4	7%	105	17%
Nuristan	75	27	3	11%	11	14%
Samangan	4 386	48	3	6%	189	4%
Saripul	6 000	70	4	6%	274	5%
Takhar	5 781	74	4	5%	135	2%
Uruzgan	706	181	5	3%	86	12%
Zabul	695	82	4	5%	40	6%
Total	64 888	1 993	118	6%	7 161	11%

To ensure adequate geographical distribution of the sample throughout the provinces, the cells were grouped in clusters. The number of clusters was equivalent to the number of images to be selected for the sample in each province. Consequently, one cell was randomly selected from each cluster. For example, to select five cells, 30 cells from a province were grouped in five clusters, each containing six cells (Fig. 46 left). From each cluster, one cell was randomly selected (Fig. 46 right).

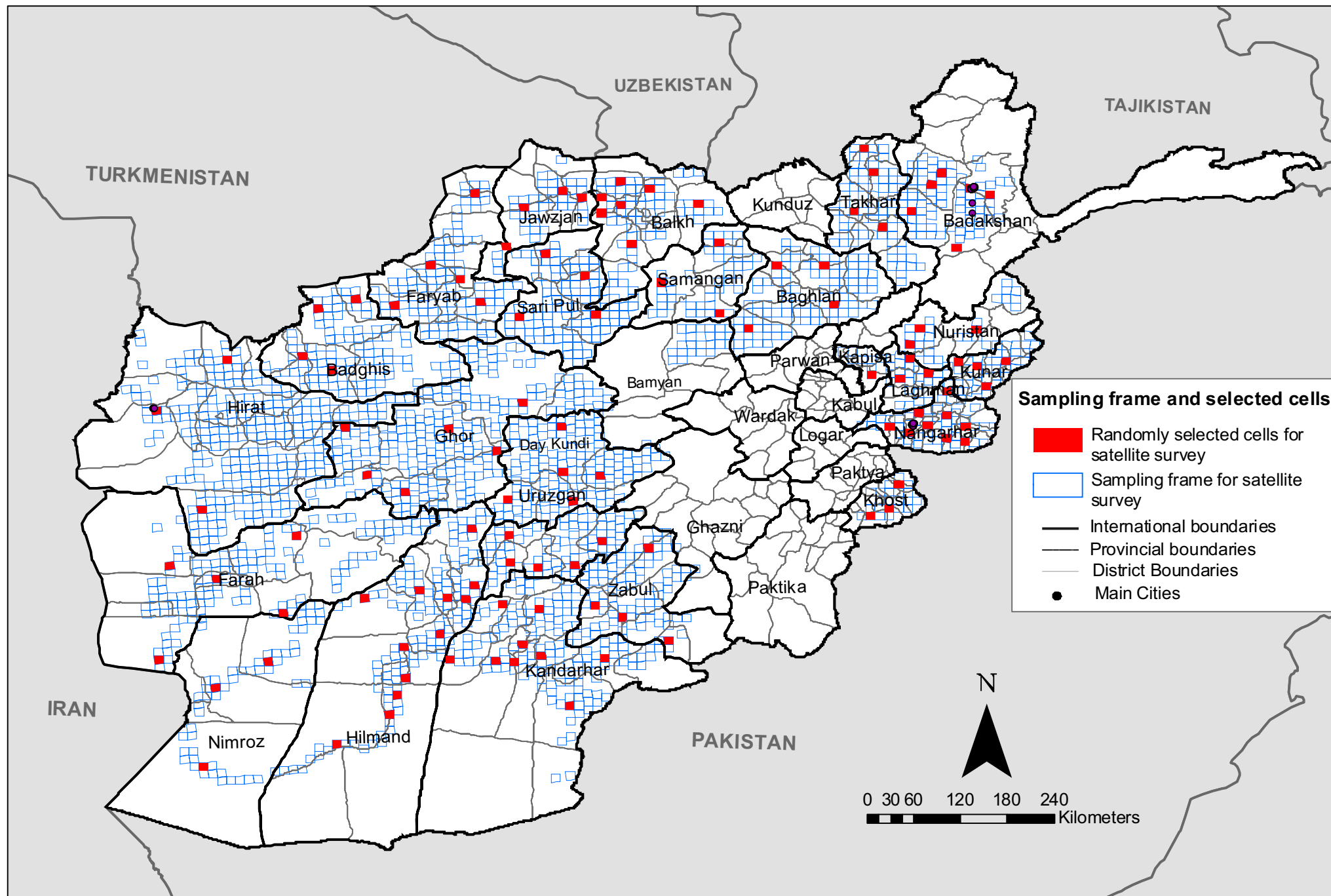
Figure 63: Cell selection

Sampling frame covering agricultural area

Randomly selected cell locations

Finally, 118 cells were selected for the sample, representing a sampling ratio of 11 per cent of the total area of arable land in the 24 provinces.

Sampling frame and selected cells for satellite survey in Afghanistan, 2007



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

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

Satellite image acquisition

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, namely the pre-harvest (capsule) stage and the post-harvest (post-lancing) stage. Detailed information on the crop growth cycle of each district has been collected in the form of a phenological chart in recent years. This is useful in 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-date 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 the 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-date 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.

Figure 64 illustrates the spectral characteristics (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 these 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. This is why two-dated images — pre-harvest and post-harvest — are collected for the same location.

Figure 64: Spectral reflectance of opium poppy and other crops

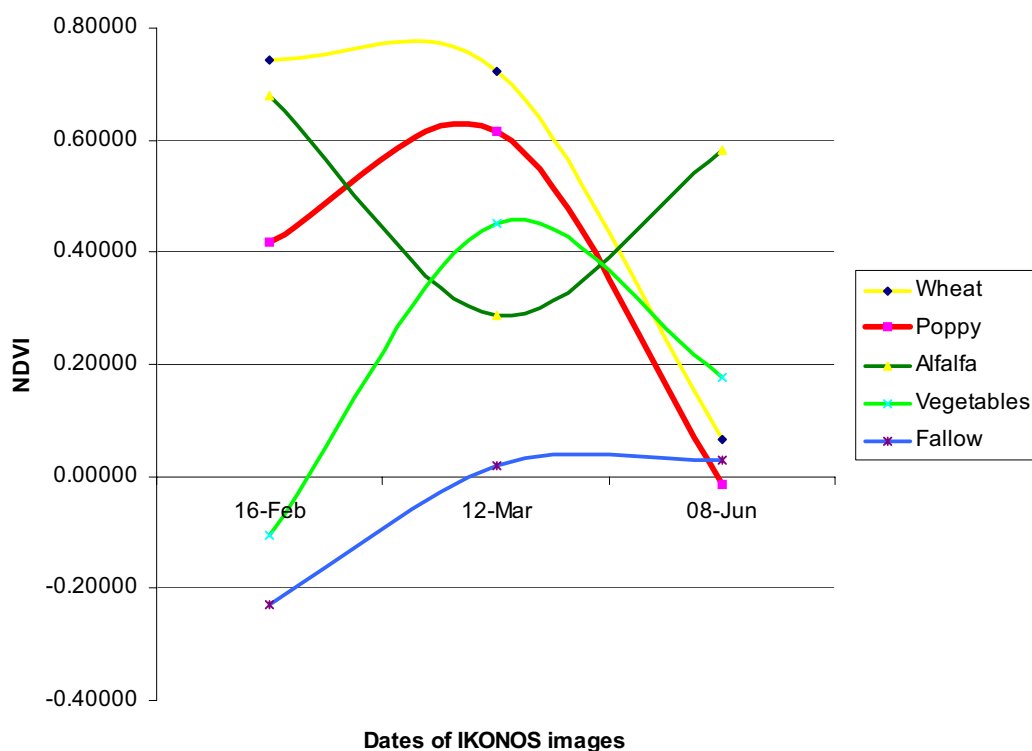
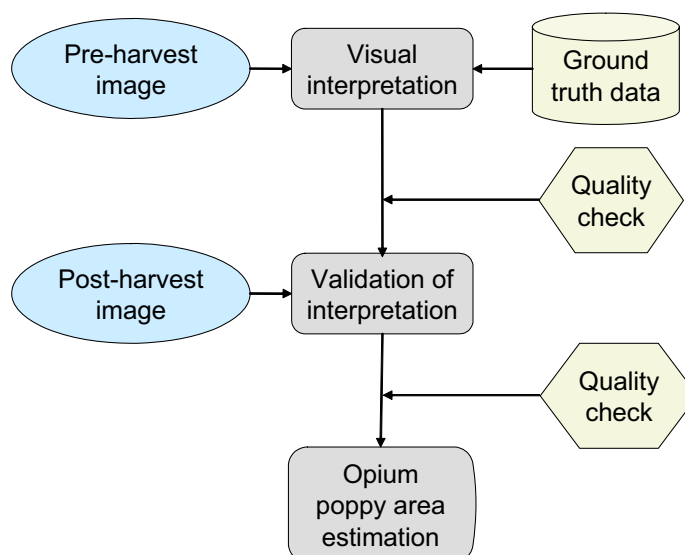


Figure 65 illustrates the growth cycles of opium poppy, wheat and clover from February to June, with the help of ground photographs. It can be seen that maximum visual discrimination between opium poppy and other crops is possible during the flowering/capsule stage and after capsule lancing.

Figure 65: Illustrations of opium poppy, wheat and clover growth cycles

 February 21, Poppy, Emergent Stage	 February 21, Wheat, Emergent Stage	 February 21, Clover, Emergent Stage
 March 13, Poppy, Cabbage Stage	 March 13, Wheat, Cabbage Stage	 March 13, Clover, Cabbage Stage
 April 7, Poppy, Steam Elongation	 April 7, Wheat, Steam Elongation	 April 7, Clover, Steam Elongation
 April 19, Poppy, Flowering Stage	 April 19, Wheat, Flowering Stage	 April 19, Clover,
 May 5, Poppy, Lancing Stage	 May 5, Wheat, Maturity Stage	 May 5, Clover
 May 21, Poppy, Lancing completed	 May 21, Wheat, Senescing	 May 21, Clover
 June 06, Poppy Field ploughed	 June 06, Wheat Harvest Completed	 June 06, Clover, Harvested

Figure 66: Image classification methodology for estimating opium poppy cultivation area

Interpretation of opium poppy cultivation from satellite images

First-dated images were acquired during the flowering or lancing stage, and second-dated images after the opium poppy harvest. Figure 68 shows an image pair acquired on two different dates. Wheat appears mostly in bright red on the first image (full coverage with vegetation appears in red; bare soil in grey/green), while opium poppy fields show pale red. While 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. The different phenological stages described above are shown in Figure 65 (field photographs of opium poppy, wheat and clover on different dates).

In previous years (2002 to 2005), digital classification was used to identify opium poppy on satellite images. The first- and second-dated images were classified separately using a maximum likelihood algorithm. Opium poppy fields were interpreted using a logical classification technique based on the classified first-dated and second-dated images.

Digital classification of images requires the skills of an analyst with comprehensive expertise in digital satellite image processing. In order to build the remote sensing analysis capacity of the Ministry of Counter-Narcotics, it was decided to opt for the visual interpretation method. The visual interpretation method is easier to learn than image classification as it requires less technical skills and experience. On the other hand, visual interpretation requires more time and more man-power.

In 2007, the visual interpretation technique was used to delineate opium poppy fields by interpreting IKONOS images covering a 10x10 km area. Ortho-rectified IKONOS images of 1 m resolution (PAN-sharpened) were used for this purpose. Opium poppy was initially identified using first-dated IKONOS 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 with the help of second-dated images. On-screen digitization of opium poppy fields was used to generate shape files.

The technical details of visual interpretation are provided below.

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 poppy cultivation (e.g. Hilmand and Kandahar) and in cases where images were obtained during the flowering and lancing stages of opium poppy. False-colour combination (Infrared, 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 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.

Ground reference information

Ground reference data were collected from selected locations covering an area of 250x250 m within the extent of 118 satellite images. These locations are referred to as 'segments'. In areas where segment maps were unavailable, ground reference data was collected in locations marked by GPS (point data).

Three to four segments were randomly selected in the agricultural area in each of the 118 image locations. The surveyors visited these segments to collect detailed information for each agricultural field. This work was carried out by eight teams comprising a total of 56 surveyors trained by UNODC. Most of the surveyors trained and assigned to the segment survey already had the necessary experience, since they had participated in the 2006 segment survey. Information collected during the segment survey included crop type, plant height, GPS coordinates and photographs.

Due to security constraints, only 310 of the planned 390 segments could be surveyed (for example, no segment could be surveyed in Zabul province). Each survey team was equipped with an orientation map to help locate segments within each satellite image, a detailed segment map showing individual land parcels and a manual containing instructions for ground data collection.

Table 53: Total number of segments surveyed

Province	Number of segments	
	Selected	Surveyed
Badakhshan	17	17
Badghis	8	8
Baghlan	16	16
Balkh	24	24
Day Kundi	8	8
Farah	20	12
Faryab	19	19
Ghor	20	14
Hilmand	52	14
Hirat	24	24
Jawzjan	8	7
Kandahar	32	28
Kunar	12	12
Laghman	12	12
Nangarhar	40	36
Nimroz	10	4
Samangan	12	12
Sari Pul	16	16
Uruzgan	24	16
Zabul	16	11
Total	390	310

Segment maps and GPS point data were superimposed over the satellite images to facilitate visual interpretation.

Ground data is not always sufficient to identify the signature of opium poppy, since segments may not necessarily contain opium poppy fields. In such cases, opium poppy was identified on the basis of the analysts' experience and subsequently confirmed using the second-dated satellite images.

The superimposition of GPS point data also posed difficulties, because the images of mountainous terrain were not perfectly ortho-rectified. This limits the use of GPS data as ground reference information, particularly in mountain areas.

Quality control

A strict quality control mechanism was adopted. The interpretation carried out by each analyst was 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 interpretation of first-dated satellite imagery. These polygons were overlaid on the second-dated images for the purpose of confirmation. Each of the potential opium poppy fields identified using first-dated satellite data was validated with the help of second-dated satellite data. The corrections involved few commissions and omissions.

Area estimation based on satellite imagery

Ratio estimation formulae were used to estimate the extent of opium poppy cultivation at the province level using Equations 1 and 2.

Equation 1: Estimation of opium poppy cultivation within each cell

$$\bar{p} = \sum x / X$$

where

\bar{p} = Average proportion of opium poppy cultivation in province

x = Total opium poppy area in each cell

X = Total agricultural area in cell

In order to estimate the total area under opium poppy cultivation in the province, Equation 2 was used:

Equation 2: Estimation of total opium poppy cultivation

$$\hat{X} = \bar{p}N_A$$

where

\hat{X} = Total opium poppy area in province

N_A = Total agricultural area (sampling frame) in province

The results for provinces with more than five selected cells were refined using the bootstrap method with 10,000 iterations. The main reason for using this method is to calculate the standard error of the estimator. Since the sample items are of varying size (the total area of agricultural land varying from cell to cell), it is not appropriate to calculate standard error using simple random formulae. The bootstrap technique does not have a significant effect on estimation of the mean. In provinces with fewer than five cells, the smaller sample size ruled out the possibility of using the bootstrapping method. For these provinces, the simple random sampling formulae were applied.

Bootstrapping with 10,000 iterations found a 90% probability that the area under opium poppy cultivation (estimated from satellite imagery) was between 177,000 ha and 209,000 ha, with a mean estimate of 193,000 ha. It should be noted that the upper and lower estimates do not lie symmetrically around the mean estimate obtained for these 24 provinces because of the use of the bootstrap method. The mean estimate for the 24 provinces where a satellite survey was conducted represented 100% of the total area under opium poppy cultivation in 2007.

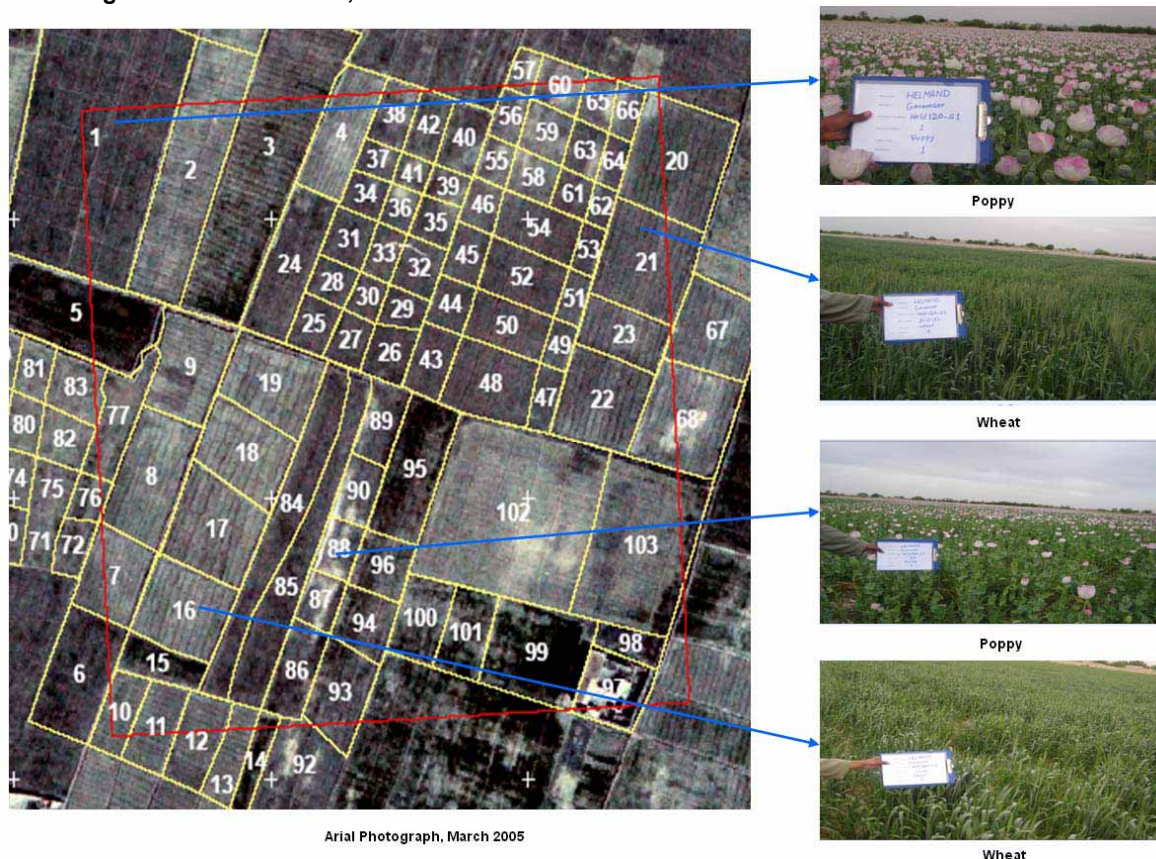
Accuracy assessment

Ground reference information (segment maps and GPS data) was used to assess the accuracy of visual interpretation of high-resolution satellite data to delineate opium poppy fields. The producer's accuracy indicates that 81 per cent of the fields identified as opium poppy by the analysts were found to be actually opium poppy on the ground, whereas user's accuracy indicates 92 per cent of the areas identified as opium poppy on the ground were correctly classified as opium poppy using satellite images. The overall accuracy of interpretation of satellite data was 94 per cent. It should be noted that ground reference data is collected in extremely difficult security conditions, which limits its accuracy.

Table 54: Accuracy of analysis of satellite data interpretation (no. of fields)

		Image Interpretation			
		Opium poppy	Other Crop	Total	Producer's Accuracy
Ground Reference	Opium poppy	592	140	732	81%
	Other crop	52	2,190	2,242	98%
	Total	644	2,330	2,974	
	User's Accuracy	92%	94%		
Overall accuracy					94%

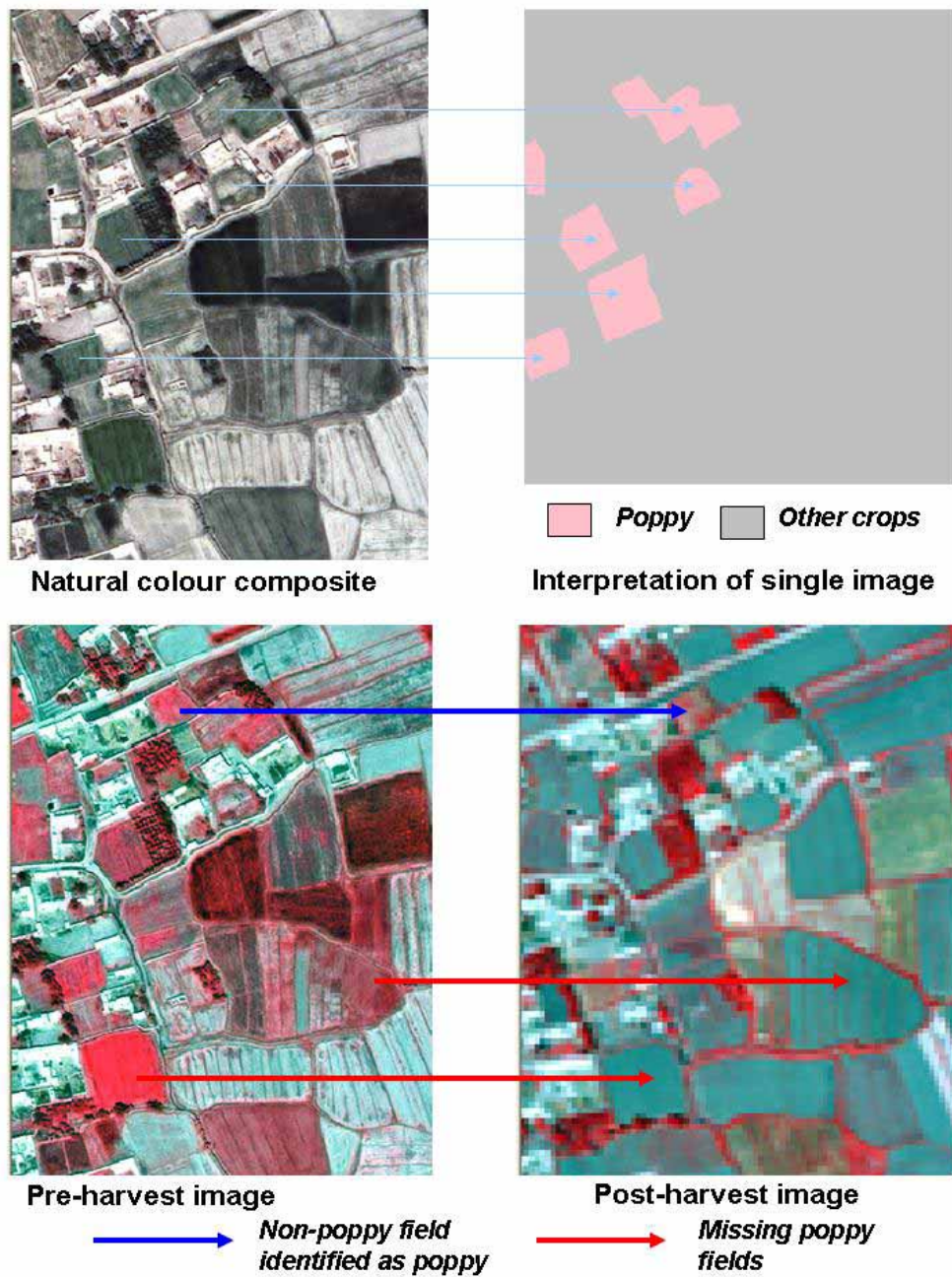
Figure 67: Segment data collection, Kandahar



Advantage of two-dated images

Visual interpretation of single-dated very high resolution images was an easy task in Hilmand, Kandahar and Nangarhar provinces. This was attributed to larger field sizes and timely acquisition of the images. Interpretation of images in Farah and Balkh was more difficult, since the spectral signatures of opium poppy were not as clear as in Hilmand, Kandahar and Nangarhar. The second-dated (post-harvest) images were therefore 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) is thus proven to be essential in such cases.

Figure 68: Advantage of two-dated images, Kandahar, 2006



3.2 Village survey methodology

Village survey activities (such as training, deployment and data collection) were carried out from March to June 2007 by 127 local field surveyors across all provinces. These activities were supervised jointly by MCN and UNODC. The surveyors were selected on the basis of their experience in opium poppy surveys, knowledge of local customs and their acceptance by local communities. Security was generally problematic for the surveyors, but selection of the surveyors from their respective regions helped to reduce security risks.

Sampling framework

The surveyors conducted structured interviews with the headmen of selected villages in each district. A total of 1,500 villages in 368 districts were surveyed across all provinces.

Opium poppy cultivation is most successful at altitudes below 1,500 m, where it is significantly more widespread than in areas of higher elevation; opium poppy cultivation above 2,500 m is comparatively rare. In view of the uneven distribution of opium poppy cultivation at different elevations, a stratified sampling method was used to select the sample villages. The villages in the sampling frame were divided into three groups (strata) according to their elevation:

Group 1: Villages located at an elevation of less than 1,500 m

Group 2: Villages located at elevations between 1,500 m and 2,500 m

Group 3: Villages located at an elevation of more than 2,500 m

Villages were selected from each group using a systematic random selection technique. In 2007, the sampling frame for the village survey data comprised a complete list of all villages in Afghanistan. The village database used to establish the sampling frame was obtained from Afghanistan Information Management System (AIMS) and consisted of 31,220 villages. The total sampling ratio was 4.8 per cent. The design and size of the sample facilitate the establishment of cultivation trends; the sample is not designed for calculating quantitative areas or production estimates. In addition to the sample villages, the surveyors, using their knowledge of the local situation, visited other areas in the province to complement their assessment both of opium poppy cultivation trends and the security situation throughout the province.

Table 55: Village survey strata

Strata	Elevation (metres)	Total no. of villages	No. of villages selected	% villages selected	No. of villages surveyed	% villages surveyed
Group 1	<=1 500	10 551	611	5.79%	613	5.81%
Group 2	1 500-2 500	11 810	618	5.23%	587	4.97%
Group 3	>=2 500	8 859	277	3.13%	300	3.39%
		31 220	1 506	4.82%	1 500	4.80%

Most of those provinces in which opium poppy cultivation was estimated on the basis of the sample village survey were found to be poppy-free (either no cultivation or cultivation below 100 ha) in 2007. Village survey data was useful primarily in understanding the socio-economic aspects of opium poppy cultivation.

The following data were collected for all villages surveyed:

- Extent of opium poppy and wheat cultivation
- Total number of families/ inhabitants living in the village
- Total number of families growing opium poppy

- Farmer estimates of wheat and opium yield
- Wheat and opium prices
- Financial status of farmers
- Reasons for cultivation/non-cultivation of opium poppy

The surveyors conducted structured interviews with 2,996 farmers and 1,500 headmen (two farmers (one opium poppy-growing and one non-opium poppy-growing) and the headman of each selected village in each district). For the 10 provinces not covered by satellite imagery, opium poppy cultivation estimates were calculated on the basis of ground survey findings.

Surveyor training

Until 2007, all surveyors were provided with village survey training in Kabul. In order to prepare for the 2007 village survey, and as part of a capacity-building exercise for national staff, survey coordinators, coordinators of individual provinces and regional survey assistants were trained in Kabul over a four-day period. They in turn trained surveyors in their respective regions. The extension of survey training sessions to the regional level is one of the milestones that have been reached in building national capacity to conduct opium poppy surveys.

During the training period, a total of 127 surveyors and nine survey coordinators were trained in the use of the survey form and survey techniques by local UNODC staff in all regions.

Surveyor training began in March 2007 and was conducted by the national staff of UNODC. MCN also participated in all training sessions. The training included practical (use of GPS, area calculation, etc) and theoretical aspects (interviewing and dialogue with village headmen and farmers).

Data collection

Opium poppy cultivation is illegal in Afghanistan, and is considered to be forbidden under Islam. Given the sensitive nature of the issue, data collection is difficult and can be dangerous. Surveyors are selected from different regions of Afghanistan through a very careful selection process. UNODC and MCN regional offices and coordinators recruit surveyors according to survey specifications and the surveyors' skills. Most of the surveyors selected already have experience in conducting UNODC surveys.

Surveyors were trained in techniques for approaching local community members and conducting interviews. Following intensive theoretical and practical training, they were deployed to the field, where they interviewed headmen of villages and conducted other survey-related activities. UNODC and MCN coordinators monitored data quality and the progress of the survey closely. Fortunately, the surveyors did not encounter any security problems.

Debriefing

At the end of the survey, surveyors were debriefed by survey coordinators, reporting on their findings in the areas they had visited and providing an assessment, inter alia, of various factors thought to influence opium poppy cultivation, including the security situation, pressure from the Government concerning survey reports, difficulties encountered in conducting the survey, the level of control exercised by Governors over their respective provinces, the presence of anti-government elements, corruption and levels of cannabis cultivation. Debriefing facilitates a greater understanding of opium poppy cultivation and the socio-political and other factors that determine cultivation trends, and provides useful guidance in analysing survey data.

Area estimation formula for village survey

Stratified random sampling formulae were used to calculate opium poppy cultivation based on the village survey in the 10 provinces where no satellite images were acquired.

\bar{x}_s = Provincial average of the surveyors' estimations of opium poppy cultivation per village in strata 's'

N_s = Total number of villages per strata ('s') in each province

$$X = \sum_s N_s * \bar{x}_s = \text{Total area of opium poppy cultivation}$$

As the area of agricultural land varies from one village to another, these results were also refined by bootstrapping the provincial samples (with 10,000 iterations). The bootstrap method also provided for the standard error of the estimates.

Most of the 10 provinces surveyed using the village survey method were poppy-free, i.e., cultivation was either 'zero' or below 100 ha.

Opium yield and production

In the past, calculation of opium yield in Afghanistan relied on interviews with farmers conducted usually prior to the harvest. The data thus reflected primarily the farmers' 'expected' opium yield rather than the actual opium yield, which was still unknown at the time of the survey. Data were also subject to the bias of the farmers.

Since 2000, UNODC has been developing an alternative objective yield assessment approach based on the measured volume of opium capsules and cultivation density¹⁹. The relationship between capsule volume per square metre and dry opium yield was originally developed from data collected in Pakistan and Thailand. It takes the form of a non-rectangular hyperbola:

Non-rectangular hyperbola formula for predicting opium yield:

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

where

Y = Dry opium gum yield (kilograms/ hectare)

VC = Mature capsule volume (cm³/m²)

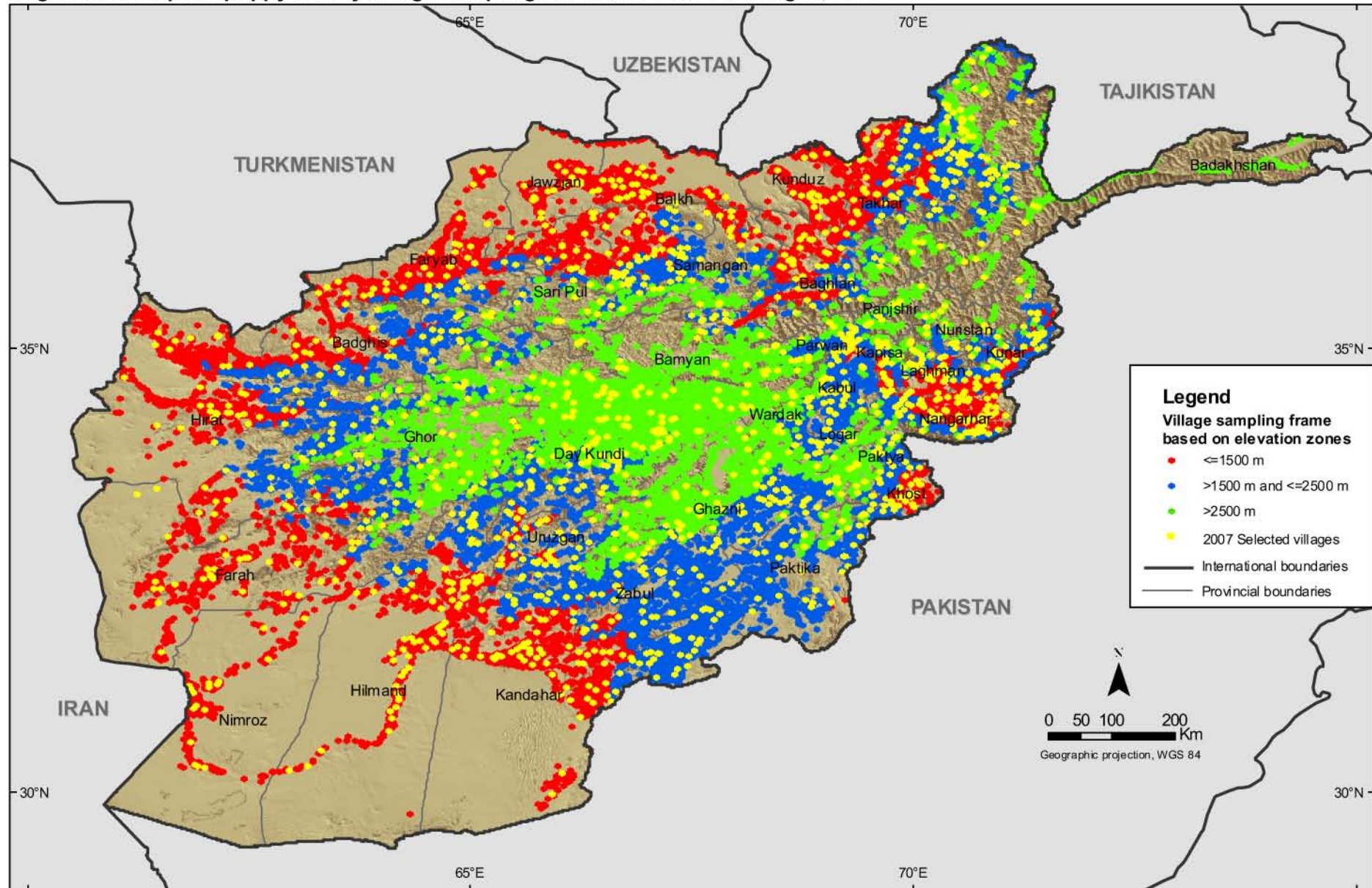
Data collection

In 2007, capsule measurements were collected from 531 fields (714 in 2006) in 185 villages randomly selected throughout the country. A total of 17,420 capsules (25,355 in 2006) from 1,593 plots were measured. It was difficult to find any opium poppy fields in the central and northern regions in 2007.

For the yield survey, the procedure established in the UNODC Guidelines for Yield Assessment was followed. An imaginary transect was drawn, along which three one-metre square plots were selected. From 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. With these data, the capsule volume per square metre was calculated and entered into a non-rectangular formula for the yield calculation. Each plot thus provided one yield observation. The simple average of the observations gave the regional yield estimate.

¹⁹ UNODC Guidelines for yield assessment of opium gum and coca leaf from brief field visits, UN New York, 2001, ST/NAR/33

Afghanistan: Opium poppy survey village sampling frame and selected villages, 2007



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

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



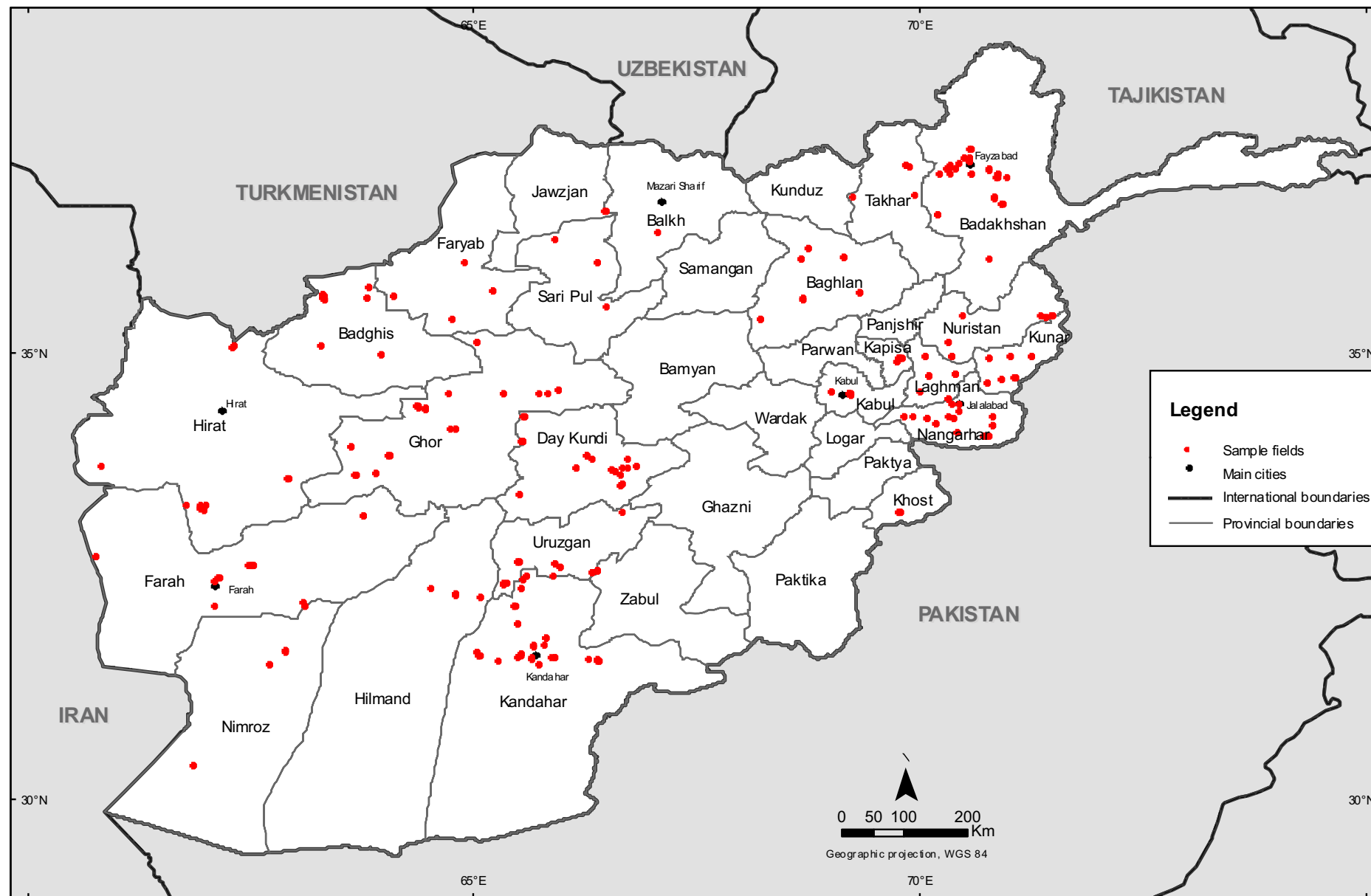
Yield survey training, 2007

3.3 Opium prices

In the 2007 village survey, 2,996 farmers in 1,500 villages were interviewed to provide data on prices for fresh and dry opium. The average regional prices for dry opium were used to estimate the total value of opium produced in Afghanistan in 2007.

Since November 2002, UNODC has maintained a regular opium price monitoring system whereby prices of fresh and dry opium are collected from farmers and traders on a monthly basis in Nangarhar, Hilmand and Kandahar. Price collection was extended to Hirat, Balkh and Badakhshan provinces in May 2005 and to Faryab, Kunduz, Takhar, Laghman, Kunar, Farah and Ghor in January 2006. Since June 2007, prices have also been collected in Nimroz province, bringing to 14 the total number of provinces where prices are collected. Some 180-200 farmers and 170-190 local traders are interviewed each month to provide this information.

Sample fields for opium poppy yield survey, 2007



Source: MCN - UNODC Afghanistan Opium Survey 2007

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

3.4 Opium poppy-growing families

In order to estimate the number of families involved in opium poppy cultivation in Afghanistan, data were collected during the village survey on the number of families growing opium poppy in the sampled villages.

The following stratified simple random sampling formulae were used to derive the number of opium poppy-growing families in Afghanistan:

\bar{x}_s = Average number of opium poppy-growing farmers per village in the sample in strata 's'

N_s = Total number of villages in the sampling frame in strata 's'

$X = \sum N_s * \bar{x}_s$ = Total number of families growing opium poppy

As the sampled villages did not have a similar population size, the results were refined with a bootstrap of 10,000 iterations, providing an estimate for the mean and for the standard error. The total number of opium poppy-growing households was estimated at 509,000 (range: 437,000- 653,000).

3.5 Value of opium production

Farm-gate level

Based on the area under cultivation (A) (193,000 ha), the yield (Y) (42.5 kg per ha of dry opium) and opium price (P) (\$122, weighted by production), the farm-gate value of the opium harvest was estimated (A x P x Y) at around one billion US dollars. This figure is equivalent to the potential gross income of farmers from opium production. It does not take into account the costs to farmers of hiring labour, using fertilizers, accepting a lower income as a result of selling the harvest in advance (salaam arrangements), paying taxes to local commanders or bribing officials not to eradicate the opium poppy harvest. The 90% confidence interval of the estimate is from US\$910 to US\$1090 million.

Table 56: Farm-gate value of opium production in 2007

Region	Production of dry opium, in metric tons	Price of dry opium per kg, in \$	Farm-gate value, in US\$ millions
Southern	5 745	167	961
Eastern	1 084	168	182
Western	959	86	82
Northern	233	90	21
North-eastern	195	115	22
Central	26	125	3
Rounded total	8 200	122	1 000
Rounded 90% confidence interval	7,530 – 8,960	119 - 125	910 – 1,090

In order to estimate the confidence interval of the farm-gate value, the confidence intervals of all parameters (area under cultivation, yield, prices) were calculated separately.

The combination of the ‘uncertainties’ (u) of the different variables, was based on the following formula²⁰:

$$u(y(x_1, x_2, \dots)) = \sqrt{\sum_{i=1, n} c_i^2 u(x_i)^2}$$

where $y(x_1, x_2, \dots)$ is a function of several parameters x_1, x_2, \dots (here: area, yield, price), and c_i is a sensitivity coefficient evaluated as $c_i = \frac{\partial y}{\partial x_i}$, the partial differential of y with respect to x_i . For simple products ($y = p \times q \times r \dots$) and an independence of the variables used (i.e. the yield per ha is not a function of the area under cultivation or the price paid to farmers), the formula could be simplified as follows:

$$u_c(y) = y \cdot \sqrt{\left(\frac{u(p)}{p}\right)^2 + \left(\frac{u(q)}{q}\right)^2 + \dots}$$

where $(u(p) / \bar{p})$ etc. are the uncertainties in the parameters, expressed as relative standard deviations. In order to arrive at the combined confidence interval of the farm-gate value, the calculated standard deviations are then multiplied with the appropriate z-value.

Given the fact that the confidence intervals for the individual parameters have already been calculated, a further simplification is possible. Instead of using the ‘standard deviation’ as a percentage of the mean of the respective parameters as inputs for the calculation of the formula shown above, before multiplying the final results with the respective z-values, the ‘differences between the mean value and the upper and lower limits of the confidence interval’, expressed as a proportion of the mean value of the parameter, can be used as input for the calculation of the overall confidence interval.

Following these considerations, the calculation was done as follows:

- a) *Calculation of individual minimum and maximum values:*

The results, based on 90% confidence intervals, showed the following results:

	Average	Minimum	Maximum
A Area under cultivation (ha):	193,000	177,000	209,000
Y Yield (kg/ha)	42.5	41.5	43.5
P Dry opium farm-gate price (\$/kg)	122	119.75	124.25

- b) *Calculation of the distance between the minimum (maximum) limit and the mean of the confidence interval, expressed as a proportion of the mean value of the respective parameter*

	Minimum	Maximum
	$\frac{\text{Min}(X) - \text{Avg}(X)}{\text{Avg}(X)}$	$\frac{\text{Max}(X) - \text{Avg}(X)}{\text{Avg}(X)}$
A = Area under cultivation (ha):	-8.29%	+8.29%
Y = Yield (kg/ha)	-2.35%	+2.35%
P = Dry opium farm-gate price (\$/kg)	-1.84%	+1.84%

²⁰ EURACHEM/CITAC, Guide CG4, *Quantifying Uncertainty in Analytical Measurements*, 2nd Edition, 2000, UK/Switzerland; http://www.measurementuncertainty.org/mu/guide/index.html?content_frame=/mu/guide/stepcalculating.html

c) Calculation of the lower (upper) limit of the overall confidence interval:

$$\sqrt{\sum_{X=A,Y,P} \left(\frac{\text{Min}(X) - \text{Avg}(X)}{\text{Avg}(X)} \right)^2}$$

$$\sqrt{\sum_{X=A,Y,P} \left(\frac{\text{Max}(X) - \text{Avg}(X)}{\text{Avg}(X)} \right)^2}$$

$$= (8.29\%^2 + 2.35\%^2 + 1.84\%^2)^{(1/2)} = +/- 8.8\%$$

The 90% confidence interval for the farm-gate value of the 2007 harvest in Afghanistan is thus:

$$\begin{aligned} & \$1000 \text{ mio} \times (1-8.8\%) - \$760 \times (1+8.8\%) = \\ & = \$912 \text{ million} - \$1,088 \text{ million} \end{aligned}$$

or rounded: **\$910 million – \$1,090 million**

In Neighbouring Countries

Opiates are usually trafficked by Afghan traders to neighbouring countries. In general, Afghan traffickers are involved in shipping the opiates across the borders. From there onwards, traffickers from neighbouring countries take over the consignments. The value of the opium production (partly transformed into morphine/heroin) in neighbouring countries close to the borders with Afghanistan is thus considered to be a good proxy for the overall gross income made by Afghan citizens from the opium sector.²¹ Apart from some refinements, the overall approach taken to calculate such an income has remained largely unchanged as compared to previous years in order to guarantee direct comparability of the results.

The calculation has followed the following steps:

- *establishment of an appropriate conversion ratio of opium into heroin:*

In Afghanistan, on average, only 6 to 7 kg of dry opium would be needed to produce 1 kg of heroin.²²

- *Opiates available for export in 2007:*

In order to arrive at the amounts available for export, seizures and local consumption have to be subtracted from the production figures.

As total seizures for 2007 are not as yet available, the average of the Afghan seizures reported for 2005 and 2006 was used as proxy. According to information provided by the Afghan authorities and information collected by UNODC's Field Office in Kabul, 105 tons of opiates (expressed in opium equivalents) were seized on average by the Afghan authorities per year over the 2005-2006 period.²³

²¹ There are, of course, also traders from neighbouring countries (notably from Pakistan, Iran and Tajikistan) purchasing opiates in Afghanistan and smuggling them across the border. Similarly, some Afghan traffickers are involved in shipping the opiates from Afghanistan to the main transshipment markets, located further inland in neighbouring countries. These effects are considered to offset each other.

²² This refers to heroin at 100% purity. In practice, laboratory efficiencies of typically 60%-70% would, of course, require the input of more opium to produce pure heroin. Heroin produced in Afghanistan, however, is not 100% pure; purity levels usually range from 40%-85%, typically slightly above 60%. This results again in a 6:1 or 7:1 conversion ratio of dry opium to heroin. (UNODC, *The Opium Economy in Afghanistan, An International Problem*, New York 2003, p. 133).

²³ Seizures in 2005 includes: 90,990 tons of opium, 7,112.4 tons of heroin and 1,967 tons of morphine; seizures in 2006 – according to preliminary data - included 29,423.6 tons of opium, 3600.3 tons of heroin and 192.8 tons of morphine. (UNODC, Annual Reports Questionnaire Data and UNODC Field Office). Data were recalculated into opium equivalents using a 7:1 ratio for opium to morphine or heroin.

The calculation of domestic consumption is based on results of UNODC's Afghanistan Drug Use Survey 2005. The survey results suggested that domestic opium consumption is equivalent to about 90 tons per year. The drug use survey also found important levels of heroin consumption, with almost 50,000 heroin users. The average quantities given were rather high: 1.4 grams of heroin per day by a male consumer and 0.9 grams by a female user, resulting in a potential total heroin consumption of 24.7 tons. One problem here relates to the unknown purity levels of the heroin consumed at the retail level. As the survey also asked for the amount of money a drug user would spend per month, an alternative approach was used to arrive at the heroin consumption figures. Annual amounts of funds used by heroin addicts were calculated and then divided by the average heroin price in Afghanistan. This resulted in a – probably - more realistic figure of 9.6 tons. Converting the heroin and the opium consumption estimates into an overall opiate consumption estimate, results in 156 tons of opiates, expressed in opium equivalents, being consumed within Afghanistan.

Table 57: Opiates available for export in 2007

	In tons	In tons of opium equivalents*	Tons of opium equivalents
Opium production			8,243
Average seizures (2005/06) of			
Opium	60.207	60.2	
morphine	1.080	7.6	
Heroin	5.361	37.5	
Less seizures			-105
Domestic consumption			
Opium	88.9	88.9	
heroin	9.6	67.2	
Less domestic consumption			-156
Opiates available for export (expressed in opium equivalents)			7,982
* using a 7:1 ratio of opium to heroin			
Sources: UNODC, Opium Survey 2007; UNODC, Afghanistan Drug Use Survey 2005, UNODC Field Office, UNODC, Annual Reports Questionnaire Data .			

- *establishment of a distribution pattern of opium production between (i) opium destined for exports and (ii) opium destined for transformation into heroin & morphine:*

Opium production in Afghanistan is primarily destined for export to foreign markets, either in the form of opium or in the form of morphine/heroin. One key question concerns the extent to which opium is transformed into morphine and heroin within Afghanistan. Previous analysis (Opium Poppy Survey 2006, UNODC) suggested that – expressed in heroin equivalents (using a ratio of 7 kg of opium equivalent to 1 kg of heroin) – about 42% of opiate seizures in the countries neighbouring Afghanistan (Iran, Pakistan, Central Asia) were in the form of opium over the 2004-2006 period and 58% in the form of either morphine or heroin, up from 45% over the 1994-96 period. These data suggest that heroin and morphine production gained in importance in Afghanistan over the last decade.

Table 58: Estimated opium and heroin & morphine exports of Afghanistan in 2007

	Opium production (metric tons)	Opium exports (metric tons)	Heroin & morphine exports (metric tons)
Opium production (2007)	8,243		
Less seizures in opium equivalents (2005/06 average)	105		
Less local consumption of opiates in opium equivalents	156		
Opiates available for further processing and exports	7,982		
Distribution		41.6%	58.4%
Opium used for purposes		3,322	4,661
Conversion rate dry opium to heroin			7 : 1 ratio
End products – exports		3,322	666

- *establishment of a distribution pattern of (i) opium exports and of (ii) heroin & morphine exports:*

Giving differences in opium and heroin prices in neighbouring countries, the next question relates to the quantities that are exported from Afghanistan across its borders. A distinction is made here between the export of opium and the export of heroin & morphine. The neighbouring countries are grouped into Iran, Pakistan, the Central Asian countries and - for the first time – China as UNODC obtained some indications of direct exports from Afghanistan to China.

Distribution of opium exports

As discussed above, the calculation suggested that some 3300 tons are exported in the form of opium. Based on a three-year average of seizures in neighbouring countries the following patterns emerges:

Table 59: Distribution of opium exports based on seizures

	Seizures (average 2004-2006)		Estimates of opium exports based on seizure distribution
	In kg	In %	
Iran	238,916	95.9	3,184
Pakistan	5,947	2.4	79
Central Asia	4,219	1.7	56
China	148*	0.1	2
Total	249,230	100%	3,332

* data for China are based on the average of 2004/05 seizures as 2006 data are not yet available; it is assumed that 10% of the opium seized originated in Afghanistan and the rest in Myanmar.

Source: UNODC, Annual Reports Questionnaire Data.

Given the strong enforcement efforts by Iran, there is probably a strong bias towards seizures made by the Iranian authorities, and thus an over-reporting of opium exports to Iran (96%). On the other hand, Iran is also the only country in the region where widespread ‘opium addiction’ is reported. In the other countries of the region, use of other opiates is more widespread. Thus, there is a strong likelihood that the bulk of the exported opium is indeed

destined for the Iranian market. This does not exclude the possibility that some of the 3,300 tons of opium leave Afghanistan via Pakistan for final destinations in Iran. In such cases, the involvement of Afghan traffickers (often Baluch traffickers) does not necessarily stop across the border in Pakistan but may well continue until the borders of Iran are crossed. In other words, the total gross income for Afghan traffickers does not change much whether Iran is targeted directly, or indirectly via Pakistan. This was the approach taken in previous years.

Nonetheless, the exclusive reliance on seizure data for the establishment of a distribution pattern was considered to be problematic. Against this background, an alternative estimation attempt has been made this year which is based on production estimates in the various regions of Afghanistan and information on drug trafficking flows collected as part of the survey activities.

Table 60: Distribution of opium production in Afghanistan in 2007

	Production	Distribution
Southern	5,745	69.7%
Eastern & central	1,110	13.5%
Western	959	11.6%
Northern	234	2.8%
North-Eastern	195	2.4%
Total	8,243	100.0%

For the purposes of defining the trafficking flows within and out of Afghanistan, a systematic monitoring survey was implemented in March 2007. Five drug flow monitoring surveyors were recruited, trained and deployed to the field on 20 March 2007. Their task was to carry out a national wide assessment of trafficking flows in all poppy growing zones as well as in the areas and districts adjacent to the main international border crossing points. The surveyors were trained to collect information on various aspects of the opium economy from primary and secondary data sources, including on drug trafficking flows. Data collection was mainly based on semi-structured interviews with key informants. Based on their observations and interviews with key informants, the following structure of opium trafficking emerged:

Table 61: Opium movements within and out of Afghanistan

Zone Name	Percentage opium flows within the country					Percentage opium flows out of the country					
	Central and Eastern	North-Eastern	Northern	Southern	Western	China	Iran	Pakistan	Tajikistan	Turkmenistan	Uzbekistan
Central and Eastern		20		40				40			
North-Eastern	25		10			10		20	30		
Northern	10			60					10	10	10
Southern					35		50	15			
Western			5				60	10		25	

Source: UNODC, "Monitoring of Drug Flows in Afghanistan" (internal paper), July 2007.

The trafficking flows identified by the surveyors indicate, for instance, that significant amounts of opium are trafficked from northern Afghanistan to southern Afghanistan (60%), mainly for further export to Iran while significant amounts are also trafficked from southern Afghanistan to western Afghanistan (35%), which are again mainly destined for export to Iran. The bulk of the opium produced in southern Afghanistan is destined for Iran. Data also indicated that important amounts of opium produced in western Afghanistan are destined for Iran (60%), followed by exports to Turkmenistan (25%). Opium exports from eastern Afghanistan go almost exclusively to Pakistan.

Combining the two data sets (production distribution and information on trafficking flows) provided a new set of estimates of the likely distribution pattern of opium exports. The ranking turned out to be exactly the same as for the distribution based on seizure data. However, the individual proportions were lower for Iran (as was to be expected) and significantly higher for the other countries, notably for Pakistan and for Central Asia.

As this was the first time that an attempt was made to determine opium exports from Afghanistan via a production distribution in combination with opium flow observations, one should not over-interpret the accuracy of these results, even though the approach taken seems to be very promising. A decision was thus made not to rely exclusively on these new results, but to use them, in combination with the 'traditional' seizure distribution in order to arrive at a picture of opium flows out of Afghanistan which should be a better reflection of reality.

Table 62: Distribution of opium exports based on 'production and trafficking flows' and on 'seizures'

	Distribution based on seizures (2004-06)	Distribution based on production and trafficking flows	Average distribution	Estimates of opium exports
	in %	in %	in %	
Iran	95.9	62.7	79.3	2633
Pakistan	2.4	23.5	12.9	430
Central Asia	1.7	13.1	7.4	246
China	0.1	0.7	0.4	13
Total	100%	100%	100.0	3322

* Data for China are based on the average of 2004/05 seizures as 2006 data are not yet available; it is assumed that 10% of the opium seized originated in Afghanistan and the rest in Myanmar. Source: UNODC, Annual Reports Questionnaire Data.

Distribution of morphine & heroin exports

Basing the heroin and morphine export distribution exclusively on seizure data (2004-06 averages) would result in more than half (57%) being exported to Pakistan, about a third (34%) to Iran and less than 10% to Central Asia. If the analysis were restricted to 2006 data only, the ratio for Central Asia would fall to 6% while the proportions of both Pakistan and Iran would rise to 59% and 35%, respectively. However, such a low proportion for Central Asia does not appear to be realistic. It would simply reflect a lack of detecting opiate shipments via Central Asia where law enforcement capacity is generally regarded to be lower than in other countries of the region.

Table 63: Distribution of heroin and morphine exports to neighbouring countries based on seizures

	Seizures (average 2004-2006)		Estimates of heroin/morphine exports based on seizure distribution
	In kg	In %	
Pakistan	28,188	56.5%	376
Iran	17,118	34.3%	228
Central Asia	4,615	9.2%	62
Total	49,921	100%	666

* data for China are based on the average of 2004/05 seizures as 2006 data are not yet available; it is assumed that 10% of the opium seized originated in Afghanistan and the rest in Myanmar. Source: UNODC, Annual Reports Questionnaire Data.

Against this background, an alternative approach was developed. Heroin and morphine production was considered to be a function of (i) production of opium and (ii) availability of morphine and heroin laboratories. Both distributions have their strengths and weaknesses. As part of the UNODC survey to monitor drug flows (undertaken in March 2007), surveyors also collected information on processing locations across Afghanistan. They identified a total of 90 laboratories that were in operation as of March 2007. The central distribution for morphine and heroin manufacture in Afghanistan is thus the number and locations of identified laboratories. This implicitly assumes that there was no bias in the identification of laboratories across the country and that, on average, laboratories were of similar size and had thus had a similar production capacity. While significant variations in the size of laboratories are well known, it is not known whether there are some regional particularities. Therefore, it could not be verified, whether the initial assumptions are valid. For this reason, it was decided not to rely exclusively on the laboratory distribution but to combine this data set with a distribution on opium production (which constituted the primary distribution pattern used in the past). Combining the two data sets – and giving a higher weight to the existence of laboratories (80%) than to the production of opium (20%) data suggest that most of Afghanistan’s morphine and heroin production is taking place in southern Afghanistan (38% of total), followed by central and eastern Afghanistan (25%). The lowest level of heroin and morphine production was identified for northern Afghanistan (1%).

Table 64: Distribution of heroin and morphine exports to neighbouring countries based on opium production and identified heroin/morphine laboratories

	Distribution based on opium production	Identified heroin/morphine laboratories	Distribution based on laboratories	Weighted overall distribution (80% labs; 20% opium production)	Estimates of heroin/morphine production (based on opium production and labs)
Southern	69.7%	27	30.0%	37.9%	253
Eastern & central	13.5%	25	27.8%	24.9%	166
Western	11.6%	18	20%	18.3%	122
North-Eastern	2.4%	19	21.1%	17.4%	116
Northern	2.8%	1	1.1%	1.4%	10
Total	100.0%	90	100.0%	100.0%	666

Sources: UNODC/Ministry of Counter-Narcotics, *2007 Afghanistan Opium Survey*, UNODC, “Monitoring of Drug Flows in Afghanistan” (internal paper), July 2007.

The next issue was to identify the export patterns from these morphine/heroin locations to neighbouring countries. In the past – based on some observations - it was assumed that morphine and heroin production leaves the country via the closest border. However, there have been some indications that this is not necessarily any longer true. UNODC has received reports of increasing trafficking activities within Afghanistan, which did not fit any longer the picture that trafficking was exclusively to the closest border. In line with this, drug prices, which used to differ substantially across regions, have been showing a stronger trend towards convergence, indirectly confirming the observation of stronger intra-regional trafficking of heroin and morphine across Afghanistan. In order to better identify these trafficking flows, UNODC undertook, as mentioned earlier, a systematic monitoring survey for defining the trafficking flows within and out of Afghanistan. Five drug flow monitoring surveyors were recruited, trained and deployed to the field in March 2007. Their task was to carry out a national wide assessment of trafficking flows in the poppy growing zones as well as in areas and districts adjacent to the main international border crossing points. The surveyors were trained to collect information on various aspects of the opium economy from primary and secondary data sources, including on drug trafficking flows. Data collection was based on semi-structured interviews with key informants. Based on these observations and interviews with key informants – and taking also other information into account (existence of laboratory) - the following structure of heroin and morphine trafficking emerged:

Table 65: Morphine/heroin flows within and out of Afghanistan

Zone Name	Percentage heroin/morphine flows within country				Percentage heroin/morphine flows out of the country				
	North-Eastern	Northern	Southern	Western	Iran	Pakistan	Tajikistan	Turkmenistan	Uzbekistan
Central and Eastern	20		40			40			
North-Eastern		10	10	10		30	40		
Northern			30				40	10	20
Southern					35*	65*			
Western					60	6	4	30	

*original information adjusted – taking location of laboratories into account Source: UNODC, “Monitoring of Drug Flows in Afghanistan” (internal paper), July 2007

The information gathered suggests that there is some important morphine and heroin trafficking from Central and Eastern Afghanistan, not only towards Pakistan but also towards southern Afghanistan. There are also important trafficking flows from northern Afghanistan to the South (30% of the total). Heroin produced in southern Afghanistan goes to Pakistan and Iran, but not to other regions of Afghanistan. Heroin produced in western Afghanistan goes primarily to Iran (60%) though significant amounts are also shipped to Turkmenistan (30%). Most of the heroin produced in north-eastern and northern Afghanistan is destined for Tajikistan, with smaller amounts being shipped to Uzbekistan and Turkmenistan. It may be also noticed that the surveyors did not receive any information of direct heroin and morphine shipments to China. While Afghanistan is playing an increasingly larger role in supplying the Chinese drug market, most of the heroin is shipped towards China via Pakistan and, to a lesser extent, via the countries of Central Asia.

Combining the heroin production estimates with the trafficking flow estimates seems to provide reasonable indications of overall trafficking flows of heroin and morphine out of Afghanistan (51% going to Pakistan; 30% to Iran and 19% to Central Asia). This will be also the distribution used by UNODC to calculate the trafficking profits. It may be also noticed that except for Central Asia the distribution is rather close to the distribution based on seizure data (which will not be used for subsequent calculations).

Table 66: Distribution of heroin and morphine exports to neighbouring countries

	Distribution based on heroin & morphine seizures (average 2004-2006)	Distribution of heroin and morphine exports based on production, labs and trafficking flows	
		In %	In tons
Pakistan	56.5%	51.1%	340
Iran	34.3%	29.6%	197
Central Asia	9.2%	19.4%	129
Total	100%	100.0%	666

- analysis of opium prices as well as of heroin & morphine prices in neighbouring countries in border regions with Afghanistan:

The next key parameters investigated were the opium and morphine/heroin prices in countries neighbouring Afghanistan, notably in the border regions with Afghanistan. Such prices were collected primarily by the UNODC field offices in the region. Prices in border areas of Tajikistan were used as a proxy for prices in border areas of Central Asian countries. For some of the countries, adjustments had to be done.

- *Opium prices (per kilogram)*

Iran (2007):

No prices could be collected by UNODC's field office in Iran in 2007 while the Iranian authorities were – unfortunately - not in a position to provide such information for the year 2007. The latest available prices (as published in last year's Afghanistan Opium Survey) date back to August-September 2006:

Eastern region (Sistan Baluchistan):	\$ 650 per kg;
Tehran	\$1,200 per kg (retail: \$1.5/gram)
Western Iran:	\$1,700 per kg

Given the strong increase of opium production in Afghanistan, and opium price declines reported from Afghanistan and other countries, it would not be very realistic to assume that prices remained unchanged in Iran in 2007. Following the analysis of price trends in the Afghan province bordering Iran in 2007 (and taking also other information into account), UNODC estimates that average opium prices in the Eastern Region (Sistan Baluchistan) are likely to have fallen to around \$600 per kg in 2007, down from \$650 in 2006 (August-September) and \$915 in 2004 (August-September).

Pakistan (April-August 2007):

Prices for Peshawar

Peshawar:	\$ 174.8 per kg (min: \$116; max: \$246)
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Opium prices in Peshawar (Pakistan) are monitored on a monthly basis as part of UNODC's ongoing price monitoring activities in Afghanistan. Given the strong rise in opium production in eastern Afghanistan, opium prices declined in Peshawar from \$232 per kg over the April-August 2006 period to \$175 per kg over the same period in 2007.

Tajikistan (January 2007)

Border areas with Afghanistan:

Gorno Badakshan:	\$250 (min \$200; max \$300)
Kathlon:	\$400 (min \$350; max \$450)
Average border region:	\$325 (min \$200; max \$450) per kg

Dushanbe: \$435 (\$420-\$450) per kg

Prices did not change between July-August 2006 and January 2007 in the border regions of Tajikistan. But, prices may have declined in subsequent months of 2007 as UNODC's monitoring systems across the border in the northern and north-eastern provinces of Afghanistan revealed falling prices. However, opium production in northern and north-eastern provinces - which would typically target Tajikistan as an outlet –declined substantially in 2007 (-73% and -67%, respectively). Moreover, Tajikistan is not the main outlet when it comes to opium. Increasingly Turkmenistan and to a small extent also Uzbekistan are used as outlets. Prices in the border regions of these two countries are typically higher than in Tajikistan (e.g. Surkhandarya and Kashkadarya in Uzbekistan: \$800-\$1000 per kg in 2006). Against this background prices reported from the border regions of Tajikistan with Afghanistan, used as a proxy for prices in border regions of Central Asia in general, were – on purpose - not adjusted.

China

No current opium prices from China are available. The latest opium wholesale prices, reported to UNODC in reply to its Annual Reports Questionnaire (ARQ), date back to 2002. For that year, China reported opium prices to range from \$870 to \$2500. The minimum price (\$870 per kg) is used here as a proxy for the unknown opium price in the border regions with Afghanistan in 2007. As the amounts of opium trafficked directly from Afghanistan to China are still minimal, the potential error from using such a price should not affect the final results of the calculations.

Heroin prices (per kilogram)Iran (August-September 2006):

No new heroin prices are available from Iran. Prices collected date back to August-September 2006:

Eastern region (Sistan Baluchistan):	\$2,200 per kilogram (40%-50% purity)
Tehran:	\$3,450 per kilogram
Western provinces:	\$4,900 per kilogram

Such prices are, however, not directly comparable with those in Afghanistan due to dilutions with other substances.

Calculation of the purity adjustment ratio:

Afghanistan:	brown heroin (base):	68% purity ²⁴
Sistan Baluchistan:	(brown) heroin :	45% (40%-50% purity):
Purity adjustment ratio:		1.5

Purity adjusted prices in Sistan Baluchistan

(adjusted to Afghan purity levels) \$3,300 (\$2200 *1.5) per kilogram in 2006

Given strong production increases in Afghanistan and falling heroin prices in the Afghan provinces bordering Iran, one cannot assume that heroin prices remained unchanged in the border regions of Iran in 2007. Following the analysis of heroin price changes in the provinces neighbouring Iran and taking additional information into account, UNODC estimates heroin prices in 2007 to have been around \$3,000 (\$1,975*1.5) per kilogram in the eastern region of Iran bordering Afghanistan.

Pakistan (January-August 2007):

Peshawar:	\$3,205.5 (min: \$2,473; max: \$4,659)
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Heroin prices in Peshawar (Pakistan) are monitored on a monthly basis as part of UNODC's ongoing price monitoring activities in Afghanistan. Given the rise in heroin production in eastern Afghanistan, prices declined across the border in Peshawar over the June-July period by 25%, from \$3,573 over the June-July period of 2006 to \$2,677 over the same period in 2007.

²⁴ Bundeskriminalamt, Dokumentation einer authentischen Heroinherstellung in Afghanistan, Wiesbaden 2005.

Tajikistan (January 2007)

- high-quality heroin prices: (heroin with purity levels of more than 70%):

Gorno-Badakhshan	\$4,500 per kg
Khatlon	\$4,500 per kg
Average: border region	\$4,500 per kg
Dushanbe:	\$4,700 per kg
Sogd:	\$5,500 per kg

Following a decline in the first few months of 2006, heroin prices increased again in the border regions of Tajikistan in subsequent months (from \$4,125 in January and an estimated \$3,810 in July/August 2006 to \$4,500 in January 2007) as well as in Dushanbe (from \$4,600 in January and \$4,250 in July-August 2006 to \$4,700 in January 2007). This was in line with reports of falling opium production in the northern and north-eastern provinces of Afghanistan and rising heroin prices in these parts of Afghanistan. Between August 2006 and August 2007 heroin prices rose in Balkh (northern Afghanistan) by 9% (from \$3,200 to \$3,500) and in Badakhshan (north-eastern Afghanistan) by 19% (from \$2,190 to \$2,604). Heroin prices are reported to be higher in the border regions of Uzbekistan with Afghanistan (Surkhundarya and Kashkadarya: \$7,000-\$10,000 in 2006).

- *Confidence Interval for export value of Afghan opiate:*

Confidence interval

The best available mid-point estimate has been given above. Nonetheless, it must be clear that there could be significant variations, if actual values of the key parameters used were to fall towards the lower or the higher end of the respective ranges. In the following sub-chapter, the 90% confidence interval of the various indicators will be calculated and discussed.

- *Production (90% confidence interval)*

The calculation of the range of opium production was already discussed in the methodology sub-chapter on the value of opium production. Afghan opium production – at the 90% confidence interval – should fall within the range of 7,533 to 8,953 metric tons. Deducting domestic leakages due to seizures and domestic consumption (261 mt), the amounts available for export would range from 7,272 to 8,692 mt.

Based on this confidence interval, Afghan opium exports range from 3,025 to 3,616 metric tons, and morphine & heroin exports from 607 to 725 metric tons.

Calculation of 90% confidence interval for opium and heroin & morphine exports:

Opium production:

range: 7,533 – 8,953 metric tons (+/- mean: 8.6% of mean of 8,243 mt)

less seizures: 105 metric tons

less local consumption: 156 metric tons

Available for export:

Range: 7,272 – 8,692 metric tons (mean: 7,982 mt)

Opium exports (41.6% of production)

Range: 3,025 – 3,616 metric tons (+/- 8.9% of mean of 3,322 mt)

Heroin & morphine exports (58.4% of production; 7:1 ratio)

Range: 607-725 metric tons (+/- 8.9% of mean of 666 mt)

The calculation of a confidence intervals for price data in the countries neighbouring Afghanistan is far more difficult as UNODC is not directly involved in the data collection process and thus, in general, does not have the raw data at its disposal. Price ranges, aiming to reflect a 90% confidence interval, have been calculated for neighbouring countries; but they must be treated with caution.

In the case of Tajikistan minimum and maximum prices have been available for January 2007 for opium. In the case of availability of minimum and maximum prices, it was assumed that the reported range included 99% of all reported prices (and that there were no important outliers). Assuming a normal distribution, this is equivalent to a value of 2.576 x standard error. As the calculations are aiming at a 90% confidence interval, the range could be reduced by dividing it by the z-value for 99% (2.576) and multiplying it with the z-value for a 90% (1.645) confidence interval (assuming a normal distribution). For heroin, however, only the typical price for good quality heroin in Tajikistan (purity of 70% or more) is available. Price ranges, are, however, available for previous years, which are used as a proxy. In the case of Iran, prices were derived from prices reported in the border regions of Iran with Afghanistan in 2006 and price changes in the Afghan provinces bordering Iran in 2007. In addition, time series data from previous periods do exist. Based on these price fluctuations, a likely 90% confidence interval of the mean price could be established. The results were applied to the 2007 estimates. In the case of Pakistan (Peshawar), no minimum and maximum prices are available. However, monthly time series data exist which enable the calculation of a confidence interval. Prices for China date back to 2002. In this case, the assumption was made, that the confidence interval would be equivalent to the unweighted average of Iran, Pakistan and Tajikistan.

- *Prices (90% confidence interval)*

OPIUM PRICES:

Opium prices in Iran (Sistan Baluchistan):	\$550 - \$650; +/- 8.3% of mean (\$600)
Opium prices in Pakistan (Peshawar):	\$156 - \$194; +/- 10.7% of mean (\$175)
Opium prices in Tajikistan (border region):	\$245 - \$405; +/- 24.6% of mean (\$325)
Opium prices in China (border region):	\$667 - \$893' +/- 14.5% of mean (\$780)

HEROIN PRICES:

Heroin prices in Iran (border region):	\$2,670 - \$3,330; +/- 11% of mean (\$3,000)
Heroin prices in Pakistan (Peshawar):	\$2,856 - \$3,555; +/- 10.9% of mean (\$3,206)
Heroin prices in Tajikistan (border region):	\$4,095 - \$4,905; +/- 9% of mean (\$4,500)

Based on these price ranges and opiate export ranges, the following confidence intervals (90%) could be calculated:

- a) Keeping production levels constant and multiplying them with the prices at the lower and upper end of the confidence interval results in a range of \$3.6 to \$4.4 billion for Afghan opiate exports in 2007;
- b) Keeping prices constant (average prices) and calculating the confidence intervals based on minimum and maximum export levels, results in a range of \$3.65 to \$4.36 billion;
- c) Using the lower estimates of the confidence interval of the overall export prices (\$483 for opium and 3,041 for heroin), the upper estimate of the interval for the export prices (\$658 for opium and 3,750 for heroin) as well as the minimum and maximum export estimates for the 90% confidence interval (3,025 mt - 3,616 mt for opium and 607 mt - 725 mt for heroin/morphine), and applying the formula shown below, gives a range of the value of the Afghan opiates market of \$3.5 to \$4.5 billion in 2007.

$$= \text{Avg}(j_1) \times \text{Avg}(j_2) \times \left(1 - \sqrt{\sum_{j=1}^2 \left(\frac{\text{Min}(j) - \text{Avg}(j)}{\text{Avg}(j)}\right)^2}\right) \quad (\text{minimum})$$

$$\text{Avg}(j_1) \times \text{Avg}(j_2) \times \left(1 + \sqrt{\sum_{j=1}^2 \left(\frac{\text{Max}(j) - \text{Avg}(j)}{\text{Avg}(j)}\right)^2}\right) \quad (\text{maximum})$$

where j=1 for prices and j=2 for production

= for opium: \$1.75 bn * (1 - (8.11%² + 8.94%²)^(1/2)) = \$1.535 bn (min)
 \$1.75 bn * (1 + (8.06%² + 8.85%²)^(1/2)) = \$1.955 bn (max)

= for heroin/morphine: \$2.26 bn * (1 - (10.44%² + 8.86%²)^(1/2)) = \$1.952 bn (min)
 \$2.26 bn * (1 + (10.44%² + 8.86%²)^(1/2)) = \$2.571 bn (max)

= for opiates: minimum: \$3.5 bn
 maximum: \$4.5 bn

The last estimate is considered to be the best for the overall 90% confidence interval of the figure of \$4.0 billion. It can be thus stated that the size of the Afghan opiate industry is – based on a 90% confidence interval - equivalent to between 47% and 60% of licit Afghan GDP (\$7.5 bn) in 2006/07 (March 2006-March 2007), as reported by the Afghan Central Statistical Office, with the best estimate suggesting a proportion equivalent to 53% of licit GDP.

ANNEX I: OPIUM POPPY CULTIVATION IN AFGHANISTAN PER PROVINCE (HECTARES), 2002-2007

PROVINCE	2002	2003	2004	2005	2006	2007	Change 2006-2007 (ha)	Change 2006- 2007 (%)
Badakhshan	8,250	12,756	15,067	7,370	13,056	3,642	-9,414	-72%
Badghis	26	170	614	2,967	3,205	4,219	1,014	32%
Baghlan	152	597	2,444	2,563	2,742	671	-2,071	-76%
Balkh	217	1,108	2,495	10,837	7,232	-	-7,232	-100%
Bamyan	-	610	803	126	17	-	-17	-100%
Day Kundi	-	2,445	3,715	2,581	7,044	3,346	-3,698	-52%
Farah	500	1,700	2,288	10,240	7,694	14,865	7,171	93%
Faryab	28	766	3,249	2,665	3,040	2,866	-174	-6%
Ghazni	-	-	62	9	-	-	0	0%
Ghor	2,200	3,782	4,983	2,689	4,679	1,503	-3,176	-68%
Hilmand	29,950	15,371	29,353	26,500	69,324	102,770	3,3446	48%
Hirat	50	134	2,531	1,924	2,287	1,525	-762	-33%
Jawzjan	137	888	1,673	1,748	2,024	1,085	-939	-46%
Kabul	58	237	282	-	80	500	420	525%
Kandahar	3,970	3,055	4,959	12,989	12,619	16,615	3,996	32%
Kapisa	207	326	522	115	282	835	553	196%
Khost	-	375	838	2	133	-	-133	-100%
Kunar	972	2,025	4,366	1,059	932	446	-486	-52%
Kunduz	16	49	224	275	102	-	-102	-100%
Laghman	950	1,907	2,756	274	710	561	-149	-21%
Logar	-	-	0	-	-	-	0	0%
Nangarhar	19,780	18,904	28,213	1,093	4,872	18,739	13,867	285%
Nimroz	300	26	115	1,690	1,955	6,507	4,552	233%
Nuristan	-	648	764	1,554	1,516	0	-1,516	-100%
Paktika	-	-	-	-	-	-	0	0%
Paktya	38	721	1,200	-	-	-	0	0%
Panjshir	-	-	-	-	-	-	0	0%
Parwan	-	-	1,310	-	124	-	-124	0%
Samangan	100	101	1,151	3,874	1,960	-	-1,960	0%
Sari Pul	57	1,428	1,974	3,227	2,252	260	-1,992	-88%
Takhar	788	380	762	1,364	2,178	1,211	-967	-44%
Uruzgan	5,100	4,698	7,365	2,024	9,703	9,204	-499	-5%
Wardak	-	2,735	1,017	106	-	-	0	0%
Zabul	200	2,541	2,977	2,053	3,210	1,611	-1,599	-50%
Total (rounded)	74,000	80,000	131,000	104,000	165,000	193,000	28,000	17%

ANNEX II: INDICATIVE DISTRICT LEVEL ESTIMATION OF OPIUM POPPY CULTIVATION, 1994-2007 (IN HECTARES²⁵)

Province	District	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Badakhshan	Arghanj Khwa														54	
	Argo														210	
	Baharak	111	64	116	9	202	23	86	345	180		5,544	1,635	710	0	
	Darayim														682	
	Darwaz													0	0	
	Darwazi Bala														0	
	Fayz Abad	77	2,344	1,592	1,634	1,282	906	1,073	868	2,370	3,109	2,362	3,111	7,154	83	
	Ishkashim			3											0	0
	Jurm	433	555	1,326	1,051	1,198	1,249	773	2,897	2,690	4,502	4,818	1,460	2,027	170	
	Khash															999
	Khwahan														0	0
	Kishim	1,093	3	177	62	62	385	507	2,191	2,840	4,530	2,883	1,076	3,165	0	
	Kohistan															0
	Kuf Ab															0
	Kuran Wa Munjan													48	0	10
	Ragh			8	31	2	8								0	400
	Shahri Buzurg					71	113	19	41	170	615			39	0	313
	Shighnan														0	0
	Shiki															0
	Shuhada															0
Tagab (Kishmi Bala)															93	
Tishkan															136	
Wakhan														0	0	
Warduj															9	
Yaftali Sufla															305	
Yamgan (Girwan)															10	
Yawan															166	
Zebak			4	8	115									0	0	
Badakhshan Total		1,714	2,966	3,230	2,902	2,817	2,684	2,458	6,342	8,250	12,756	15,607	7,369	13,056	3,642	
Badghis	Ab Kamari													127	0	
	Ghormach							20		4	101		944	624	250	
	Jawand											226	134	431	66	
	Muqur													220	149	
	Murghab							21		22	69	345	1,889	1,034	3557	
	Qadis													391	198	
	Qala-i- Naw											43		378	0	
Badghis Total		0	0	0	0	0	0	41	0	26	170	614	2,967	3,205	4,219	
Baghlan	Andarab								81	31	301	564	548	947	130	
	Baghlan *							152		120	16	154	374	72		
	Baghlani Jadid											81	248	371	287	
	Burka											198	242	39	31	
	Dahana-l-Ghori				328	929	967	27			37	200	24	35	0	
	Dih Salah														14	
	Dushi											89	116	174	68	
Firing Wa Gharu															0	

²⁵ District estimates may not be statistically significant as the sample size at the district level is not appropriate to produce estimate at such level.

Province	District	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
	Guzargahi Nur														30
	Kahmard *											527	263	255	
	Khinjan										9	21	92	137	23
	Khost Wa Firing										21	0	295	442	56
	Khwaja Hijran (Jilga Nahrin)														10
	Nahrin								1		63	276	35	36	0
	Puli Hisar														0
	Puli Khumri						38	20		1	37	173	224	81	21
	Tala Wa Barfak										113	161	102	153	0
Baghlan Total		0	0	0	328	929	1,005	199	82	152	597	2,444	2,563	2,742	671
Balkh	Balkh				13	29	29	82	1	22	332	411	2,786	1,975	0
	Chahar Bolak				165	530	2,600	53			68	877	2,701	799	0
	Chahar Kint											23	25	16	0
	Chintal			1,065	532	485	1,428	2,451		153	617	258	1,878	2,074	0
	Dawlat Abad								3	-		141	202	181	0
	Dihdadi							22		8	35	16	990	307	0
	Feroz Nakhchir														0
	Kaldar											152	395	123	0
	Khulm											50	367	0	0
	Kishindih											111	290	189	0
	Marmul											3	18	12	0
	Mazari Sharif											50	119	78	0
	Nahri Shahi							33		14	30	139	425	833	0
	Sholgara							28		19	28	256	543	245	0
	Shortepa											8	98	401	0
	Zari														0
Balkh Total		0	0	1,065	710	1,044	4,057	2,669	4	217	1,108	2,495	10,837	7,233	0
Bamyan	Bamyan										20	93	19	17	0
	Panjab										250	31		0	0
	Sayghan														0
	Shibar										36	492	107	0	0
	Waras										191	64		0	0
	Yakawlang										112	123		0	0
Bamyan Total											610	803	126	17	0
Day Kundi	Day Kundi *								0	-	836	1,996		1,948	
	Gizab	1,476	16	8	0	0	0	0	0	-	776	1,109		1,243	1054
	Ishtarlay														535
	Kijran								0	-	418	189		1,633	366
	Khadir														531
	Kiti														282
	Miramor														512
	Nili														0
	Sangi Takht														2
	Shahristan								1	-	415	421		2,220	64
Day Kundi Total		1,476	16	8	0	0	0	0	1	0	2,445	3,715	2,581	7,044	3,346
Farah	Anar Dara											91	1,828	143	16
	Bakwa		1	13	129	31	129	259				39	390	1,093	3458
	Bala Buluk		8	19	169	36	186	183			513	336	1,665	1,669	5312
	Farah			18	18	10	44	73				87	729	905	1328
	Gulistan			581	252	94	428	849			1,187	447	163	202	1132
	Khaki Safed											84	432	537	99
	Lash Wa Juwayn											41	1,568	215	233

Province	District	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
	Pur Chaman											409	293	363	1549
	Pusht Rod											554	2,482	1,709	1314
	Qalay-I-Kah											189	407	506	337
	Shib Koh											12	283	352	87
Farah Total		0	9	631	568	171	787	1,364	0	500	1,700	2,289	10,240	7,694	14,865
Faryab	Almar											239	57	338	213
	Andkhoy											15	13	31	0
	Bilchiragh							6		26	232	24		322	620
	Dawlatabad											78	133	27	0
	Gurziwan														101
	Khani Chahar Bagh											205	6	490	0
	Khwaja Sabz Posh											129	451	375	238
	Kohistan											640	50	84	152
	Maymana							1				248		218	66
	Pashtun Kot							11		1	281	429	97	60	249
	Qaramqol											55	138	43	0
	Qaysar							16			150	1,050	579	880	303
	Qurghan														0
	Shirin Tagab							3			103	137	1,141	172	924
Faryab Total		0	0	0	0	0	0	36	0	28	766	3,249	2,665	3,040	2866
Ghazni	Ab Band													0	0
	Ajristan	313										62		0	0
	Andar													0	0
	Bahrami Shahid(Jaghatau)												9	0	0
	Dih Yak													0	0
	Gelan													0	0
	Ghazni													0	0
	Giro													0	0
	Jaghatau *													0	
	Jaghuri													0	0
	Khwaja Umari													0	0
	Malistan													0	0
	Muqur													0	0
	Nawa													0	0
	Nawur													0	0
	Qarabagh													0	0
	Rashidan													0	0
	Waghaz													0	0
	Wali Mohammad Shahid													0	0
	Zana Khan													0	0
Ghazni Total		313	0	0	0	0	0	0	0	0	0	62	9	0	0
Ghor	Chaghcharan									700	1,189	872	1,149	1,233	910
	Charsada														41
	Dawlat Yar														132
	Du Layna														131
	Lal Wa Sarjangal											1,055	718	771	200
	Pasaband									700	805	175	48	241	17
	Saghar									300	256	340	120	283	18
	Shahrak										640	902	18	1,398	0
	Taywara									500	808	649	240	608	39
	Tulak										84	990	396	145	16

Province	District	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Ghor Total										2,200	3,782	4,983	2,689	4,679	1,503
Hilmand	Baghran		2,519	1,267	2,754	2,910	2,794	2,653		1,800	2,309	2,232	2,507	2,890	4,287
	Dishu (Registan)									-		369	911	851	1,160
	Garmser (Hazarjuft)	786	725	942	1,993	1,205	2,643	2,765		2,020	462	1,922	1,912	6,168	6,523
	Kajaki	979	4,087	2,814	3,904	3,959	5,746	4,625		2,640	1,392	1,676	1,639	6,760	5,807
	Lashkar Gah	2,256	885	1,054	1,325	1,869	2,528	3,145		1,140	605	1,380	1,332	4,008	6,320
	Musa Qala	1,154	5,137	3,924	4,360	5,574	7,013	5,686		3,690	2,455	2,404	1,664	6,371	8,854
	Nad Ali	12,529	5,983	4,035	5,102	5,156	8,667	8,323		5,880	870	4,177	2,356	11,652	20,045
	Nahri Sarraj	590	4,716	4,309	4,807	2,426	4,041	4,378		1,850	1,575	6,486	3,548	10,386	22,769
	Naw Zad	2,345	2,799	3,596	1,585	3,605	4,424	5,085		2,650	3,096	1,051	3,737	2,707	6,192
	Naway-i Barakzayi	6,074	1,254	505	722	1,150	2,581	3,246		2,730	1,240	3,506	2,552	10,168	6,314
	Reg (Khan Nishin)							222		1,940		1,893	2,772	3,765	8,484
	Sangin	2,866	973	1,909	1,971	1,734	2,646	1,711		2,810	777	1,365	1,184	2,862	5,150
	Washer		676	555	877	1,084	1,469	1,014		800	590	892	386	735	865
Hilmand Total		29,579	29,754	24,910	29,400	30,672	44,552	42,853	0	29,950	15,371	29,353	26,500	69,323	102,770
Hirat	Adraskan											133	9	99	196
	Chishti Sharif											166	42	42	0
	Farsi										134	28	110	111	0
	Ghoryan											60	238	204	302
	Gulran											240	33	32	0
	Guzara											88	231	233	0
	Hirat											0	16	16	0
	Injil											41	394	382	0
	Karukh											265	124	121	0
	Kohsan											4	72	73	146
	Kushk											73	64	50	367
	Kushki Kuhna											3	15	15	0
	Obe											842	144	131	0
	Pashtun Zarghun				38			38				154	249	242	0
	Shindand								146			427	54	408	516
Zinda Jan											7	128	129	0	
Hirat Total		0	0	0	38	0	0	184	0	50	134	2,531	1,924	2,288	1526
Jawzjan	Aqcha						532	208		47	171	247	631	30	0
	Darzab											625	272	16	803
	Fayzabad						43	105		24	280	218	112	473	21
	Khamyab							6		30	51	40	68	2	0
	Khaniqa														0
	Khwaja Du Koh											19	15	271	0
	Mardyan						43	111		4	228	174	21	348	62
	Mingajik						1,789	141		7	64	101	77	38	0
	Qarqin						186	10		24	58	151	43	17	0
	Qush Tepa														43
Shibirghan								19		1	36	98	508	828	156
Jawzjan Total		0	0	0	0	0	2,593	600	0	137	888	1,673	1,748	2,023	1086
Kabul	Bagrami													0	0
	Chahar Asyab													0	0
	Dih Sabz													0	0
	Farza														0
	Guldara													0	0
	Istalif													0	0
	Kabul													0	0
Kalakan													0	0	

Province	District	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
	Khaki Jabbar													0	0
	Mir Bacha Kot													0	0
	Musayi													0	0
	Paghman													0	0
	Qarabagh													0	0
	Shakar Dara													0	0
	Surobi						132	340	29	58	237	282		80	500
Kabul Total		0	0	0	0	0	132	340	29	58	237	282	0	80	500
Kandahar	Arghandab	211	87	331	561	399	750	459		330	139	261	287	735	1,016
	Arghistan						38	13		80	14	651	2,449	784	310
	Daman						110	50		190	357	895	775	183	375
	Ghorak	347	803	692	1,503	1,126	1,109	574		380	166	241	233	336	1,445
	Kandahar (Dand)	320	53	234	21	73	227	156		640	293		0	1,367	1,220
	Khakrez	362	274	627	286	518	632	320		560	312	145	185	217	132
	Maruf	30	16	1		3	5	17		-	63	117	150	464	914
	Maywand	256	333	618	1,278	2,497	2,022	995		1,090	353	514	1,281	1,362	2,878
	Miya Nishin														322
	Nesh														432
	Panjwayi *	250	357	266	255	134	132	184		150	482	864	4,687	4,714	
	Reg											0	327		4
	Shah Wali Kot	678	97	94	127	162	236	238		260	489	923	2,379	1,593	1,258
	Shorabak										111	45	19	409	308
	Spin Boldak	1,170	107	194	91	317	261	26		290	277	303	218	454	768
	Zhari														5,232
Kandahar Total		3,624	2,127	3,057	4,122	5,229	5,522	3,034	0	3,970	3,055	4,959	12,990	12,618	16,615
Kapisa	Alasay											77	82	0	367
	Hisa-i-Awali Kohistan														0
	Hisa-i-Duwumi Kohistan														0
	Koh Band											111	33	0	0
	Kohistan *											116		0	
	Mahmud Raqi											10		0	0
	Nijrab											92		0	0
	Tagab						5	104	0	207	326	116		282	468
Kapisa Total		0	0	0	0	0	5	104	0	207	326	522	115	282	835
Khost	Bak											0		14	0
	Gurbuz											47		10	0
	Jaji Maydan											8		16	0
	Khost(Matun)											0		0	0
	Mando Zayi											125		0	0
	Musa Khel											86		0	0
	Nadir Shah Kot											75		0	0
	Qalandar											39		0	0
	Sabari											0		0	0
	Shamal														0
	Spera										118	0		5	0
	Tani								6		257	458	2	88	0
	Tere Zayi											0		0	0
Khost Total		0	0	0	0	0	0	0	6	0	375	838	2	133	0
Kunar	Asad Abad						73	239	1	140	396	841	270	356	42
	Bar Kunar						47	72	31	40	163	52	14	10	111
	Chapa Dara											535	147	23	0
	Chawkay	13	11			8	9	50	8	140	83	571	284	111	19

Province	District	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
	Dangam								4	49		44	22	9	90
	Ghaziabad														5
	Khas Kunar	75	82	10		12	50	173		70		298	41	18	8
	Marawara										345	170	22	33	6
	Narang		15	1		13	27	84	10	100	173	425	55	25	57
	Nari								1	-	60	0	19	0	80
	Nurgal	27	19	5		8	28	98	9	70	353	460	58	88	7
	Pech								11	263	310	585	76	183	0
	Shaygal wa Shiltan														5
	Sirkanay		25	2		34	54	71	8	100	141	385	50	75	11
	Wata Pur														3
Kunar Total		115	152	18	0	75	288	786	82	972	2,025	4,366	1,059	931	446
Kunduz	Ali Abad						5	51		3	5	41		0	0
	Archi											9		102	0
	Chahar Dara						8	30		6	15	37		0	0
	Imam Sahib						3					28		0	0
	Khan Abad						2	36			11	70		0	0
	Kunduz						9	51		3	9	32		0	0
	Qalay-I- Zal						11	321		5	8	7	275	0	0
Kunduz Total		0	0	0	0	0	38	489	0	16	49	224	275	102	0
Laghman	Alingar					2	71	131	3	146	354	593	107	259	23
	Alishing					3	26	88	0	104	148	597	69	192	237
	Dawlat Shah								12	-	571	233	44	118	124
	Mihtarlam					14	72	190		240	366	580	25	0	0
	Qarghayi					58	128	298	0	460	468	753	30	140	177
Laghman Total		0	0	0	0	77	297	707	15	950	1,907	2,756	274	709	561
Logar	Azra														0
	Baraki Barak													0	0
	Charkh													0	0
	Kharwar														0
	Khushi													0	0
	Muhammad Agha													0	0
	Puli Alam													0	0
Logar Total		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nangarhar	Achin	5,354	2,187	2,315	1,640	1,693	2,209	1,317	1	940	2,131	1,907	198	1,274	1,797
	Bati Kot	3,797	529	392	1,013	2,034	603	535		2,390	1,994	4,683	166	550	1,774
	Bihsud														0
	Chaparhar	1,089	1,377	1,750	1,234	1,365	977	832	2	990	1,169	1,818	20	209	878
	Dara-I-Nur	1,302	392	199	73	199	734	421		380	24	472	2	0	322
	Dih Bala	307	646	354	569	511	468	439	11	650	927	358	17	68	1,075
	Dur Baba	29	78	38	39	56	50	33		40	31	99	5	19	36
	Goshta	1,249	467	116	77	122	240	238	99	150	13	217	10	41	109
	Hisarak	202	453	253	370	436	741	541	2	620	1,016	1,392	64	283	295
	Jalalabad	458	31	51	123	397	979	1,021		90	4	1,658	77	0	0
	Kama		18			198	389	589		1,120	558	1,898	82	0	0
	Khogyani	4,347	2,577	2,628	3,385	3,808	5,338	4,913	3	2,640	2,986	2,269	117	750	3,253
	Kot														0
	Kuz Kunar	293	233	115	15	105	236	399		500	102	801	37	151	153
	Lal Pur	302	267	79	66	137	270	248	95	250	1	362	17	68	356
	Muhmand Dara	1,630		156	83	125	290	255		720	19	1,170	54	221	995
	Nazyan	343	138	251	111	252	184	177		150	98	168	8	160	266
	Pachir Wa Agam	768	571	681	400	488	731	630	3	420	1,142	1,091	35	143	594

Province	District	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
	Rodat	1,026	2,038	1,959	1,583	2,147	3,649	2,302		2,760	3,313	3,633	50	0	3,755
	Sherzad	1,954	2,351	1,646	1,689	1,302	1,741	1,719	2	1,470	1,641	1,229	57	430	864
	Shinwar	3,884	1,265	2,075	1,478	1,374	1,559	1,300		2,060	1,616	1,759	79	504	2,218
	Surkh Rod	747	106	587	619	1,072	1,602	1,840	0	1,440	118	1,229	0		0
Nangarhar Total		29,081	15,724	15,645	14,567	17,821	22,990	19,747	218	19,780	18,904	28,213	1,093	4,871	18,739
Nimroz	Chahar Burja											65	526	1,119	87
	Chakhansur											0		0	0
	Kang	10	2	1	107	5	2					0		40	0
	Khash Rod	672	117	135	535	6	201	219			26	50	1164	661	6,421
	Zaranj													135	0
Nimroz Total		682	119	136	642	11	203	219	0	300	26	115	1,690	1,955	6,507
Nuristan	Bargi Matal											2	535	522	0
	Du Ab														0
	Kamdesh										210	307	269	262	0
	Mandol											0	731	713	0
	Nurgaram														0
	Nuristan										438	185	19	19	0
	Wama											66		0	0
	Waygal											205		0	0
Nuristan Total											648	765	1,554	1,516	0
Paktika	Barmal													0	0
	Dila													0	0
	Gayan													0	0
	Gomal													0	0
	Jani Khel														0
	Mata Khan													0	0
	Nika													0	0
	Omna													0	0
	Sar Hawza													0	0
	Sarobi													0	0
	Sharan													0	0
	Turwo														0
	Urgun													0	0
	Waza Khwa													0	0
	Wor Mamay													0	0
	Yahya Khel														0
	Yosuf Khel														0
	Zarghun Shahr													0	0
	Ziruk													0	0
Paktika Total		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paktya	Azra					4	29	46	1	38	419	603		0	0
	Chamkani								0	-	76	275		0	0
	Dand Wa Patan											175		0	0
	Gardez													0	0
	Jadran											0		0	0
	Jaji								0	-	185	11		0	0
	Jani Khel											18		0	0
	Lija Mangal								0	-		118		0	0
	Sayid Karam								0	-	41	0		0	0
	Shamul *											0		0	
	Shwak											0		0	0
	Zurmat											0		0	0
Paktya Total		0	0	0	0	4	29	46	1	38	721	1,200	0	0	0

Province	District	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Panjshir	Bazarak														0	
	Dara														0	
	Khinj (Hisa-I-Awal Panjshir)											0		0	0	
	Hisa-i-Duwumi Panjshir											0		0	0	
	Panjshir											0		0	0	
	Paryan														0	
	Rukha														0	
	Shutul														0	
	Unaba														0	
Panjsher Total												0	0	0	0	
Parwan	Bagram											274		0	0	
	Chaharikar											181		0	0	
	Ghorband											141		0	0	
	Jabalussaraj											21		0	0	
	Kohi Safi											41		124	0	
	Salang											0		0	0	
	Sayd Khel														0	
	Shekh Ali											263		0	0	
	Shinwari											389		0	0	
	Surkh Parsa											0		0	0	
	Parwan Total		0	0	0	0	0	0	0	0	0	0	1,310	0	124	0
Samangan	Aybak										14	27	0	0	0	
	Dara-I- Sufi Bala								614		34	196	1,454	1,182	0	
	Dara-I- Sufi Payin														0	
	Hazrati Sultan										29	85	280	90	0	
	Khuram Wa Sarbagh							54	0		24	238	307	99	0	
	Ruyi Du Ab											605	1,833	589	0	
Samangan Total		0	0	0	0	0	0	54	614	100	101	1,151	3,874	1,960	0	
Sari Pul	Balkhab										453	204	95	188	0	
	Gosfandi														0	
	Kohistanat											471	1,424	377	0	
	Sangcharak											687	441	1,122	16	
	Sari Pul										595	476	959	415	203	
	Sayyad											23	52	25	41	
	Sozma Qala	0	0	0	0	0	0	146	0	57	380	113	256	124	0	
Sari Pul Total							146	0	57	1,428	1,974	3,227	2,251	260		
Takhar	Baharak														0	
	Bangi							8	0		20	13		0	79	
	Chah Ab						17	45	19		4	27		70	0	
	Chal						8	17	20			30		15	9	
	Darqad											15		0	0	
	Dashti Qala														0	
	Farkhar						6	6	26		43	27	43	118	32	
	Hazar Sumuch														32	
	Ishkamish							10	19		77	40		2	47	
	Kalafgan						101	93	27		77	69		609	318	
	Khwaja Bahawuddin														0	
	Khwaja Ghar						9	57	32		26	35		109	0	
	Namak Ab														0	
	Rustaq							10	151	24		34	194	1,321	816	118
	Taluqan							16	97	16		14	115		77	577

Province	District	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
	Warsaj						12	9	10		14	66		46	0
	Yangi Qala						22	154	20		71	131		317	0
Takhar Total		0	0	0	0	0	201	647	211	788	380	762	1,364	2,179	1,211
Uruzgan	Chora	694	424	1,574	233	652	932	1,179	0	1,330	975	1,402	259	2,024	71
	Dihrawud	909	938	2,923	1,870	1,033	1,243	726	0	1,340	1,282	2,523	209	1,704	3,538
	Khas Uruzgan	0	4	0	0	0	0	130	0	-	580	358	338	886	173
	Nesh *	410	334	104	399	373	510	394	0	490	59	426	352	614	
	Shahidi Hassas	1,337	12	0	0	1,158	1,110	802	0	1,190	1,333	782	646	1,127	3,109
	Tirin Kot	1,428	1,180	3,271	2,484	1,445	1,194	1,494	0	750	469	1,874	221	3,348	2,312
Uruzgan Total		4,778	2,892	7,872	4,986	4,661	4,989	4,725	0	5,100	4,698	7,365	2,025	9,703	9,203
Wardak	Chak										211	284		0	0
	Day Mirdad										0	90	106	0	0
	Hisa-i-Awali Bihsud										22	0		0	0
	Jalrez										531	78		0	0
	Markazi Bihsud										472	0		0	0
	Maydan Shahr										527	102		0	0
	Nirrh										780	215		0	0
	Sayd Abad										192	248		0	0
Wardak Total											2,735	1,017	106	0	0
Zabul	Arghandab	0	0	0	0	0	74	139	0		302	526	205	346	79
	Atghar										188	32	86	36	16
	Daychopan	0	0	0	0	0	41	114	0		646	431	1,016	742	389
	Kakar (Khak-e Afghan)														104
	Mizan	54	0	255	154	160	373	383	0		309	251	56	123	129
	Naw Bahar														63
	Qalat	0	0	0	0	1	46	40	0		689	317	188	657	78
	Shahjoy								0		178	679	240	538	320
	Shamulzayi										65	44	16	35	159
	Shinkay										164	287	102	228	139
	Tarnak wa Jaldak	0	0	0	0	0	77	48	1			410	145	506	136
Zabul Total		54	0	255	154	161	537	585	1	200	2,541	2,977	2,053	3,211	1,611
TOTAL		69,940	53,743	56,819	58,417	63,672	90,909	82,033	7,606	74,045	80,482	126,899	103,919	164,969	192,981
Rounded Total		70,000	54,000	57,000	58,000	64,000	91,000	82,000	8,000	74,000	80,000	131,000	104,000	165,000	193,000

ANNEX III: ERADICATION FIGURES BY DISTRICT (2007)

Province	District	Eradication (ha) verified (includes eradication during lancing stage)	No. of fields where eradication reported	No. of villages where eradication reported	Total ha of poppy remaining after eradication in surveyed villages	% of opium poppy eradication in surveyed villages
Badakhshan	Arghanj Khwa	1	2	1	0	100
	Argo	181	287	48	242	43
	Baharak	283	379	49	15	95
	Darayim	373	736	48	113	77
	Fayzabad	35	116	16	1	97
	Jurm	192	361	29	124	61
	Kishim	109	316	43	17	87
	Shahri Buzurg	2	10	3	0	100
	Tishkan	13	12	4	0	100
	Warduj	22	94	20	1	95
	Yaftali Sufla	100	162	12	4	96
Badghis	Ghormach	23	100	15	13	64
	Jawand	8	56	3	10	46
	Murghab	177	1072	12	3458	5
	Qadis	24	94	4	11	68
Baghlan	Andarab	6	8	1	0	100
	Baghlani Jadid	48	63	6	0	100
	Burka	15	26	4	0	100
	Dih Salah	27	26	5	9	75
	Dushi	10	17	2	0	100
	Nahrin	12	20	1	0	100
	Puli Hisar	22	28	2	6	78
Balkh	Tala Wa Barfak	46	85	12	1	97
	Chimtal	13	20	2	10	56
	Sholgara	1	5	1	1	52
Day Kundi	Shahristan	5	102	5	13	29
Farah	Bakwa	17	55	11	378	4
	Bala Buluk	80	142	15	804	9
	Khaki Safed	21	56	8	382	5
	Pusht Rod	26	48	2	62	29
Faryab	Bilchiragh	8	63	5	0	100
	Gurziwan	28	109	18	23	55
	Khwaja Sabz	43	177	12	2	96
	Pashtun Kot	26	139	8	0	99
	Qaysar	220	925	63	61	78
	Shirin Tagab	12	43	4	0	100
Ghor	Chaghcharan	85	73	10	200	30
	Charsada	51	100	19	276	16
	Dawlat Yar	52	69	8	54	49
Hilmand	Lashkar Gah	1,511	509	71	2,714	36
	Nahri Sarraj	435	139	22	992	30

Province	District	Eradication (ha) verified (includes eradication during lancing stage)	No. of fields where eradication reported	No. of villages where eradication reported	Total ha of poppy remaining after eradication in surveyed villages	% of opium poppy eradication in surveyed villages
Hirat	Adraskan	0.3	3	3	0	100
	Ghoryan	12	58	16	6	68
	Kohsan	3	13	2	2	63
	Kushk	20	28	8	166	11
	Shindand	35	157	36	96	27
Jawzjan	Darzab	24	51	3	0	100
	Qush Tapa	83	95	6	0	100
	Shibirghan	16	63	8	0	100
Kabul	Surobi	14	53	5	8	64
Kandahar	Arghandab	519	174	42	352	60
	Daman	1,017	482	57	262	80
	Dand	1,084	582	104	1,079	50
	Maywand	1,814	466	59	273	87
	Panjwayi	1,346	679	58	2,207	38
	Shah Wali Kot	90	35	10	22	80
	Takhta Pul	877	399	48	755	54
	Zhari	1,160	211	47	0	100
Kapisa	Hisa-i-Duwumi Kohistan	0.2	6	3	0	100
	Koh Band	5	225	17	16	25
	Mahmud Raqi	1	14	7	0	100
	Nijrab	4	153	7	29	12
Khost	Gurbuz	1	5	1	0	100
	Jaji Maydan	3	78	2	0	100
	Spera	2	21	1	0	100
	Tani	12	67	8	0	100
Kunar	Asad Abad	0.5	18	2	0	100
	Chawkay	0.5	9	3	0	100
	Dangam	4	38	2	0	100
	Marawara	7	109	9	9	42
	Narang	5	49	5	0.1	98
	Nurgal	10	40	2	0	100
	Shaygal wa Shiltan	12	86	5	0	100
	Sirkanay	17	93	5	0	100
Kunduz	Khan Abad	5	17	2	0	100
Laghman	Alingar	442	1498	56	38	92
	Alishing	125	353	16	23	84
	Dawlat Shah	202	532	20	25	89
	Mihtarlam	4	15	1	0	100
	Qarghayi	29	99	7	25	54

Province	District	Eradication (ha) verified (includes eradication during lancing stage)	No. of fields where eradication reported	No. of villages where eradication reported	Total ha of poppy remaining after eradication in surveyed villages	% of opium poppy eradication in surveyed villages
Nangarhar	Achin (Spin Ghar)	207	980	83	994	17
	Bati Kot	479	554	35	3311	13
	Bihsud	1	19	1	2	42
	Chaparhar	78	301	24	78	50
	Dara-I-Nur	9	84	10	16	35
	Dih Bala	106	640	36	180	37
	Dur Baba	1	26	5	6	20
	Goshta	85	194	22	261	25
	Khogyani	196	747	40	681	22
	Kot	242	361	44	1918	11
	Kuz Kunar (Khewa)	3	31	1	1	77
	Lal Pur	249	408	32	582	30
	Muhmand Dara	361	795	42	1034	26
	Nazyan	54	274	30	205	21
	Pachir wa Agam	56	249	15	383	13
	Rodat	120	413	40	2949	4
	Sherzad	25	139	13	20	56
	Shinwar (Ghani Khil)	755	1722	70	1150	40
	Surkh Rod	21	65	5	4	83
Nimroz	Chahar Burja	14	45	6	1	91
	Chakhansur	2	5	1	0	100
	Khash Rod	19	37	9	124	13
Nuristan	Nurgaram	0.4	8	2	13	3
Parwan	Kohi Safi	4	144	4	0	100
Sari Pul	Balkhab	1	10	1	0	100
	Kohistanat	14	18	1	0	100
	Sayyad	104	205	39	25	80
Takhar	Chal	21	32	5	0	100
	Kalafgan	105	407	21	110	49
	Rustaq	240	990	54	96	71
	Taluqan	350	820	60	63	85
Uruzgan	Tirin Kot	121	156	18	445	21
Zabul	Shahri Safa	183	67	23	61	75
Grand Total		17,587	24,864	2,109	30,103	37



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