

Where have all the flowers gone?: evaluation of the Taliban crackdown against opium poppy cultivation in Afghanistan

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Received 3 February 2004; received in revised form 16 July 2004; accepted 26 July 2004

Abstract

This study presents what we believe to be the first formal evaluation of the Taliban crackdown against opium poppy cultivation in Afghanistan. Afghanistan was the main source of the world's illicit heroin supply for most of the 1990s. From late 2000 and the year that followed, the Taliban enforced a ban on poppy farming via threats, forced eradication, and public punishment of transgressors. The result was a 99% reduction in the area of opium poppy farming in Taliban-controlled areas. The evaluation uses multiple comparison areas: the non-Taliban area of Afghanistan, neighbouring countries, the non-contiguous comparison area of Myanmar (Burma), and, the rest of the world. Alternative possible causes of the reduction such as drought, migration or changes in global opium markets are reviewed and excluded. It is concluded that the reduction in Afghan poppy cultivation was due to the enforcement action by the Taliban. Globally, the net result of the intervention produced an estimated 35% reduction in poppy cultivation and a 65% reduction in the potential illicit heroin supply from harvests in 2001. Though Afghan poppy growing returned to previous levels after the fall of the Taliban government, this may have been the most effective drug control action of modern times.

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Keywords: Taliban; Opium poppy; Afghanistan

Introduction

There has been much reported in the popular media about the Taliban government's enforcement of a ban on opium poppy growing in Afghanistan during 2000 and 2001, and the resumption of growing in 2002 with the overthrow of the regime (Bearak, 2001; Crossette, 2001; McCarthy, 2001; Salopek, 2001; *The Economist*, 2002). However, the enforcement of the ban has not, to the knowledge of the authors, been formally evaluated. This study aims to fill that gap.

During the 1990s, Afghanistan was the main source of the world's illicit heroin supply, accounting for an estimated 70% in 2000 (UNODC, 2003a, 2003b, p. 89). Heroin is manufactured from opium produced by the opium poppy. Having

consolidated their rise to power in the mid-1990s, and in the face of international pressure plus diplomacy from the United Nations Office on Drugs and Crime (UNODC), the Taliban regime enforced an existing ban on opium poppy growing from July 2000 onwards. The ban was enforced by three principal techniques: the threat of punishment, the close local monitoring and eradication of continued poppy farming, plus the public punishment of transgressors. Local inter-agency groups were made accountable for the poppy cultivation of local farmers, giving them a clear incentive to implement the enforcement effort. The result was a 99% reduction in the land area under opium poppy cultivation in Taliban-controlled areas. Comparison to illicit poppy cultivation in multiple comparison groups, combined with qualitative evidence and an assessment of the active preventive ingredients, indicate that the reduction is attributable to the enforcement effort. Four comparison areas are used in this

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study: non-Taliban areas within Afghanistan; countries adjacent to Afghanistan, the non-adjacent illicit poppy cultivating country of Myanmar (Burma), and the rest of the world. A slight displacement effect produced an increase in opium poppy cultivation in areas of Afghanistan outside Taliban control, but this had little overall impact. There was no identifiable change in poppy cultivation in neighbouring countries. Myanmar, Laos and the rest of the world did not exhibit any changes that would suggest the reduction in poppy cultivation in Afghanistan can be attributed to events outside Afghanistan such as a change in the global opium or heroin market. The result of the Taliban law enforcement action was a net 65% reduction global potential opium/heroin production from the 2001 harvest. Hence, this is arguably the most effective drug control enforcement action of modern times.

The findings of this evaluation should not be interpreted as supporting the politics or activities of the Taliban regime. The authors are strongly opposed to what was the Taliban regime, and to all forms of autocratic, totalitarian and/or theocratic regimes. Likewise, although the Taliban activities are referred to herein as enforcement, this does not condone the actions nor imply that such activities can or should be undertaken elsewhere in the name of 'law enforcement'. Rather, this study is presented in the spirit that it is an important case study to document, and that if there are any lessons to be learned then it behoves us to seek them out. Our intention is that, at worst, the result is closer examination of a unique event of significance to law enforcement, crime science and international drug policy.

Four brief technical clarifications will assist the reading of what follows. First, the opium poppy, *papaver somniferum*, is often referred to as poppy herein, for brevity. Second, although the term 'illicit' should be applied to poppy cultivation and opium production in this study to distinguish them from the legal production of opiates for medicine, the term is also usually dropped for brevity. Third, the organization that was known as the United Nations International Drug Control Programme (UNDCP) at the time of many of the events described herein is now part of the United Nations Office on Drugs and Crime (UNODC). For consistency and ease of reading, the acronym UNODC refers to both in this text, except where reference is made to UNDCP publications. Fourth, although the enforcement of the ban began at the end of the year 2000 as described below, the bulk of its occurrence and impact was in 2001, and so for simplicity it is usually referred to in relation to 2001.

The following section gives an overview of the history of the opium poppy in Afghanistan and the rise of the Taliban regime. It is followed by a description of events leading up to, and constituting the implementation of, the enforcement of the ban on poppy cultivation in 2001. The key active ingredients of the ban are identified. The quantitative impact analysis facilitates the exclusion of alternative possible causes of the reductions in poppy cultivation, and is followed by discussion and conclusions.

History

Opium in Afghanistan

The UNODC traces opium poppy cultivation in Afghanistan to the 18th century. Specific details appear to be scarce until increased documentation occurred with the emergence of the international drug control system in the early 20th century. In 1924, Afghanistan reported low levels of opium poppy cultivation to the League of Nations and cultivation grew steadily until it was banned in 1945 (UNODC, 2003a, 2003b, p. 88).

In 1972, the International Narcotics Control Board, citing suspicious illicit production increases throughout Afghanistan, identified the country as the most "immediate challenge" to the control of illicit opium and trafficking (UNODC, 2003a, 2003b, p. 88). At that time the main global sources of illicit opium were Turkey, Pakistan and Iran. For the remainder of the 1970s the three countries enforced bans on opium production, leaving a vacuum in the markets for southwest Asian illicit opium and heroin.

In 1979, the Soviet invasion decimated Afghanistan's legitimate agricultural network. Many Afghan farmers turned to subsistence farming of the opium poppy, a transformation assisted by the vacuum in the southwest Asian opium market. This tendency was promoted by the fact that profits from opium poppy farming were used by Afghani guerrillas to buy weapons to resist the Soviet forces (UNODC, 2003a, 2003b, p. 88).

The Soviet occupation lasted a decade until 1989, during which time Afghanistan opium production increased an average of 15% annually (UNODC, 2003a, 2003b, p. 89). With the Soviet exodus, the absence of substantial government in Afghanistan provided even greater opportunity for opium poppy cultivation, which continued to increase. By 1994 when the first comprehensive United Nations survey of opium poppy in Afghanistan was conducted, 71,500 ha of Afghanistan was under opium poppy cultivation. By this time, Afghanistan was established as the world's major source of illicit opium, accounting for an estimated 60% of potential global illicit production (UNODCCP, 2001, p. 60). MacDonald and Mansfield (2001) speculated that the "uniqueness" of Afghanistan would lessen the possibility of enforcement tactics having any substantial effects upon illicit opium.

By 2000, Afghanistan was estimated to produce 70% of the world's potential illicit opium. Due to the greater average yield per hectare of the Afghan poppy however, it only accounted for 37% of the global total area estimated to be under illicit poppy cultivation. Myanmar's larger area of poppy cultivation was estimated to produce only a third of Afghanistan's opium. The distinction between poppy cultivation and opium production is important because it is the latter that has the greatest influence upon global opium and heroin supplies. Afghanistan and Myanmar together accounted for 93% of estimated potential global illicit opium production in

2000, with Laos accounting for 3.6%, Colombia accounting for almost 2%, and Mexico, Thailand, and Pakistan for less than 1% of production. According to the UN, Afghan farmers reserved the most fertile soil and the most advanced irrigation techniques for opium poppy (UNODC, 2003a, 2003b, pp. 28–30). The quality of the estimates of cultivation and production is reviewed later.

The rise of the Taliban

The 1979 Soviet invasion of Afghanistan and the subsequent decade of fighting ruined numerous facets of Afghan infrastructure including the educational system (Rubin, 1999). As a result, a generation of youths emerged who were taught exclusively by rural-based *madrasas*, or Islamic seminaries for the training of clergy, in southern Afghanistan and Pakistan. Schooling in these *madrasas* centred around ultra-conservative Deobandi Islam, mandating fundamental interpretation of the writings of the Koran (Rubin, 1999).

Soviet withdrawal in 1989 left an unstable communist government that collapsed in 3 years under pressure from *mujahidin* guerrillas (Rubin, 2002). However, the *mujahidin* proved ineffective in creating a stable government, with various ‘warlords’ staking claim over different regions. As the Afghan economy failed to improve, the feudalistic structure of the country remained both unpopular and unstable. However, it was several years until the Taliban began to exploit this political void.

The students displaced from southern Afghanistan by war and occupation, combined with those of Pakistan, banded together as *Da Afghanistano da Talibano Islami Tahrik* or the Islamic movement of Taliban of Afghanistan. ‘Taliban’ is derived from the Arabic word *talib*, which means ‘religious student’. The group promised peace, an end to the conflict between the *mujahidin* groups, and a government based on the teachings of Islam (Rubin, 1999, 2002). Electing Mullah Muhammad Omar, or Amir-ul-Momineen (meaning “the supreme leader of the faithful”) as spiritual leader, the Taliban initiated a revolution to “cleanse” Afghanistan (Bearak, 2001).

Early documentation of Taliban activity suggested a “Robin Hood” aura; a group of outlaws assisting helpless townsfolk fend off oppressive and unjust rulers (Rubin, 2002). Villagers recalled tales of Taliban faithful attacking warlords to rescue kidnapped teenage girls in place of weak or fearful families. The Taliban were viewed as local heroes, as saviours from the state of nature imposed upon villagers by the nearest warlord. People of southern Afghanistan began to call on the Taliban for assistance, cementing a trust between villagers and their powerful new guardians (Rubin, 2002). Each subsequent victory over the *mujahidin* swelled Taliban ranks with fresh followers galvanized by the numerous and quick victories they had witnessed. New recruits meant a larger army, and a larger army provided the means for further conquest.

In 1994, the Taliban began to solidify the chaotic southern regions of Afghanistan. Victories came quick, and within 2 years Taliban forces had advanced northward and captured the capital city of Kabul (Rubin, 2002). In May of 1997, the Taliban took control of the last major city held by the *mujahidin*, and assumed governing control of Afghanistan (Rubin, 2002). Seeking to consolidate the northern areas of the country, the Taliban met resistance from Ahmad Shah Masud, the last *mujahidin* commander, and his newly formed Northern Alliance army (Rubin, 2002).

The Northern Alliance held parts of Afghanistan for the duration of the Taliban regime. By 2001, close to 95% of Afghanistan was under Taliban rule. A northeastern area, approximately 5% of the country’s land area, was controlled by the Northern Alliance, as shown in Fig. 1. Approximately a further 15% of the country was largely under Taliban control but with pockets of resistance. This geo-political divide within the country is important in the evaluation that follows because Taliban enforcement action to eliminate poppy cultivation would not be expected to extend to areas of Afghanistan outside Taliban control.

At the end of 2001, the Taliban regime was deposed by United States and allied forces in the wake of the bombing of the World Trade Center and Pentagon on September 11, 2001. Since then, and at the time of writing in 2003, the country has been led by Hamid Karzai, a powerful southern Pashtun. Karzai was endorsed as head of state in June 2002 by a *loya jirga*, a grand council of warlords and influential persons in the country, and is seeking to build a broad-based government. Extensive poppy cultivation quickly resumed in Afghanistan after the fall of the Taliban regime.

Enforcement of the opium poppy ban

The description of events leading up to the enforcement of the ban, as well as the tactics used, has been constructed from various sources. This includes correspondence by the authors with a United Nations official who had close knowledge of negotiations with the Taliban, plus various published documents relating to Afghanistan and news reports. Many independent press reports exist relating to that time, and were frequently based upon first-hand experience and interviews in Afghanistan. Although perhaps not as privileged to inside information on the UN diplomatic negotiations, the independent news reports give a vital independent angle. They are arguably less sanitized and more explicit about the nature of the punishment of farmers who transgressed the poppy ban. The description of events given below synthesizes these sources with the aim of presenting a balanced account.

Events leading to enforcement of the ban

A summary timeline of key events preceding the enforcement action is given in Table 1. By 1998 the Taliban was increasingly isolated from the international com-



Fig. 1. Taliban and Northern Alliance-controlled areas of Afghanistan in 2001. (■) Dark shaded area (northeast, approximately 5% of the country) areas held by Northern Alliance. (▨) Partially shaded areas (approximately 15% of the country) Taliban with pockets held by Northern Alliance. All other area of Afghanistan controlled by Taliban. Source: www.cnn.com.

munity for promoting fundamentalist Islamic policies that were viewed as inhumane. In particular, restrictions upon the freedom and rights of women received widespread disapproval, as did control of most media and restrictions on many activities accepted as normal in democratic societies. According to a senior UN official in the country at the time, the only major international agency that maintained contact with the Taliban was the United Nations Office on Drugs and Crime. By this account, UNODC maintained open communications with the otherwise isolated Taliban regime through what the official termed “foot-in-the-door” tactics. By maintaining this communication, the UNODC aim was to seek to influence Afghan drug policy, a tac-

tic justified by the country’s major role in the global illicit heroin trade (United Nations official, 2003, personal communication). The anonymity is maintained but was not requested).

In March 1999, UNODC convened a meeting in Pakistan with Taliban officials and Islamabad drug liaison officers. UNODC officials interpreted the meeting as successful insofar as the Taliban appeared to enjoy the positive international exposure that resulted (UNODC, 2003a, 2003b, p. 92). The meeting was viewed as establishing a fledgling trust between UNODC and the Taliban high command which UNODC officials hoped would facilitate their influence upon Afghan drug control policy.

Table 1
Timeline of events leading to Afghan poppy ban

Date(s)	Event(s)
1998–1999	UNODC “foot-in-the-door” policy maintains only link with major international agency for a politically isolated Taliban.
March 1999	Islamabad meeting between UNODC, Taliban, Pakistan law enforcement. Subsequent drug control meetings follow in which UNODC pledged aid to locate largest poppy fields.
September 1999	Mullah Omar orders one-third reduction in opium poppy cultivation.
Early 2000	Forced eradication campaign begins.
July 2000	Mullah Omar issues <i>fatwa</i> against poppy cultivation and opium production.
September–October 2000	Locally formed <i>Shuras</i> disseminate information to local farmers.
October 2000 to end of Taliban regime	<i>Shuras</i> enforce poppy ban.

At subsequent meetings addressing drug control, UNODC pledged aid in locating the largest poppy fields and, in September 1999, Taliban leader Mullah Omar ordered a one-third reduction in poppy cultivation. This was followed, at the behest of UNODC officials, by a forced eradication campaign beginning in early 2000 (*The Economist*, 2001; UNODC, 2003a, 2003b, p. 92; United Nations official, 2003, personal communication. The anonymity is maintained but was not requested.).

The description of events given to the authors by a UN official suggests that UNODC diplomats were able to exploit three key levers to encourage the Taliban to seek to reduce poppy cultivation. First, the Taliban were facing increasing international political pressure and United Nations sanctions. In this context, UNODC established initial trust and influence with the Taliban who gained some positive recognition in return. This “foot-in-the-door” tactic included the offer of some UNODC financial resources. Second, it is possible that UNODC officials were able to play upon the hard-line anti-drugs position inherent to the fundamentalist teachings of the Taliban. The religious doctrine provided justification for enforcement which might otherwise have proven unpopular among subsistence farmers, traders and other beneficiaries. Third, after the initial progress had been made, UNODC officials were subsequently able to play upon Taliban pride which was wounded when the one-third reduction in poppy target announced by Mullah Omar in 1999 was not achieved. If this diplomatic combination of carrots and sticks was responsible for inducing the forced eradication and total elimination of poppy that followed, then UNODC could arguably claim it as one of the most significant negotiated drug control efforts to date. During mid-2000, the Taliban informed UNODC officials that they would take “significant” steps towards the total elimination of opium poppy in Afghanistan.

Other factors were at work during this period. In 1997 the then head of UNDCP, Pino Arlacchi, brokered a deal with the Taliban. In return for the elimination of opium poppy, the UN would provide \$25 million per year for 10 years in development assistance to Taliban areas. Arlacchi’s pronouncements were controversial because many countries either did not formally recognise the Taliban government and/or opposed working with the Taliban due to their poor human rights record, though the US government backed the deal soon after its announcement (Fish, 1998; Smith, 1997). Although some development projects were begun in Afghanistan, they were terminated in 2000 due to lack of financing from the UN as well as continuing extensive poppy cultivation (Schulenberg, 2000, p. 15; Wrep, 2000). The impact upon subsequent Taliban decisions is unclear. In the face of a reneged ‘deal’ it might have been anticipated that the Taliban had little incentive to reduce opium poppy cultivation, but the evidence from the subsequent anti-poppy effort suggests that other factors were more important.

Implementation and enforcement tactics

In July 2000, Taliban supreme leader Mullah Omar announced a *fatwa* or religious decree stating that poppy cultivation and opium production violated fundamental Islamic tradition. Any lack of respect for such a decree would reflect upon the religious leadership of Mullah Omar and the strength of Taliban rule. With personal reputation and international political favour at stake, there was a sharp incentive for implementation throughout the Taliban chain of command. District administrators created monitoring group *shuras* in their territories. *Shuras* consisted of the chief of police, the chief of the Vice and Virtue Department, spiritual leader *ulemas* from local mosques, and tribal elders.

From September to October 2000, *shuras* disseminated information about the *fatwa* and its enforcement to local farmers, urging them not to cultivate poppy in the upcoming season. After October, *shuras* were the primary enforcers of the ban, for which they were well placed because they had local knowledge of poppy farming, farmers and families. If enforcement slackened and was subsequently discovered by Taliban officials, *shuras* endured identical punishment as violators. Motivated by this threat, *shuras* complied with their mandate with swift, and often brutal, efficiency. The good local knowledge and community contacts of the members of the *shuras* plus their accountability are the active ingredients that ensured widespread and pro-active implementation of the enforcement action.

The proactive enforcement combined prevention and punishment to trigger specific and general deterrence and incapacitation effects. Many farmers in violation of the prohibition were forced to destroy their own crops before completing a prison term of 2 years or more concurrent with various forms of corporal punishment including whipping and public beatings (Komarow, 2001). An August 10, 2000 edition of *The Economist* states that the Taliban was also known to possess a “fondness of public executions and dismemberment”. Others had their faces blackened and were immediately taken to jail, remaining until destruction of their poppy harvest was defrayed (Bearak, 2001; Gannon, 2000). Some violators were paraded through the streets with blackened faces carrying several heavy sacks of heroin or wearing poppies while a “town crier” informed the village (via megaphone) of the *fatwa* violation. If a poppy farmer was caught by higher ranking Taliban, village elders had their heads shaved and shared the violator’s “walk of shame” through the streets and bazaars, giving local communities an incentive to ensure that the whole population complied. While an explicit record of specific acts of punishments being utilized on ban violators remained elusive, it is wholly within the realm of possibility that their use, or threat of use, would have been a powerful motivator to comply. The elimination of poppy cultivation that resulted is quantified and assessed in relation to comparison groups in the following section.

One potentially competing explanation of extensive reductions in poppy deserves brief mention. In October 2000,

the British Broadcasting Corporation (BBC) reported in the television programme *Panorama* and elsewhere that the Pleospora fungus had been developed which would be an effective killer of the opium poppy (BBC, 2000b). The Pleospora fungus was developed in Uzbekistan under the auspices of the UN with funding from the UK. However, at that time there was uncertainty about the legality and possible environmental impact of such biological warfare. If the herbicide had somehow been secretly and extensively used in Afghanistan in 2001 it seems certain that this would be widely known. Its presence would have been revealed either by those who introduced it, by the Taliban, by poppy farmers or others present in the area. Such widespread and controversial activity would not go unnoticed and there is, to our knowledge, no evidence that the fungus was introduced. There is, however, some possibility that the threat of the use of such herbicides could have further encouraged the Taliban to implement their crackdown upon poppy cultivation.

Impact analysis

Prior to the analysis, a brief description is given of the methodology of the poppy surveys that produce the cultivation and production estimates. The impact analysis is followed, in Section “Discussion”, by a review of the strength of the evaluation design.

Methodology of the opium poppy cultivation estimates

United Nations estimates of Afghan opium cultivation are generally held to be the most accurate available. The surveys, conducted annually since 1994, rely primarily upon on-the-ground field surveys. The measurement techniques are similar to those used to estimate licit agricultural crops in the western world. The estimates are checked and verified by comparison to satellite images. Further details on the specifics of method are available in the primary sources (UNDCP surveys each year since 1994). Similar surveys are now conducted by UNODC for all the major opium poppy (and coca leaf) growing areas of the world (see the illicit crop monitoring section at www.unodc.org).

It is an open secret, as any cross-check of the data will confirm, that, if necessary, the UNODC supplements its surveys and field office estimates with those from the International Narcotics Control Strategy Report (INCSR) of the United States Department of State. Though some INCSR estimates have been questioned in the past due to inconsistencies (Reuter, 1996), with the implication that the estimates are influenced by politics, they are widely used in reputable academic research (see e.g. Stares, 1996; Tullis, 1995). For present purposes, INCSR data (United States Government, Department of State, 2003) was added to the UN data in relation to 2002 poppy cultivation in Pakistan, Thailand, Vietnam, Colombia and Mexico, which were not presented separately in UNODC reports to the 2003 Commission on

Table 2
Poppy cultivation in Taliban-controlled and Northern Alliance-controlled areas of Afghanistan

Year	Taliban-controlled areas (before end of 2001)	Northern Alliance-controlled areas (before end of 2001)	Total
2000	77271	4901	82172
2001	874	6732	7606
2002 ^a	62727	11319	74046

Source: Derived from UNODC (2003).

^a For presentational purposes, the same geo-political boundaries are presented for 2002 even though the Taliban government fell at the end of 2001.

Narcotic Drugs (ECOSOC, 2003). However, the contribution of these countries to the global poppy cultivation total is around 5% combined. Hence, any influence upon this study due to variability in the estimates for these countries would be trivial.

In short, the cultivation estimates used for this study are the best available and all available indicators suggest they are representative of reality. Moreover, since the magnitude of change in the 2001 Afghan poppy crop is so large relative to other years, even the application of wide confidence intervals to the data would not shake the main analysis or its interpretation. The bulk of the analysis below is discussed as percentage changes. The interested reader can easily derive the percentages from the cultivation and production data presented in Tables 2–4.

Impact and displacement in Afghanistan

The 2001 efforts by the Taliban *shuras* would not be expected to have an impact upon the whole of Afghanistan. Although the Taliban controlled approximately 95% of the country, the Northern Alliance controlled around 5% in the northeast, and 15% remained largely under Taliban control but disputed in some areas, as illustrated in Fig. 1. The tactics would not be expected to have an impact in the northeastern area controlled by the Northern Alliance. However, the northern area that was not under Taliban rule makes a comparison area which, aside from its smaller geographical size (analogous to a smaller sample size in traditional experimental research), effectively controls for all variables except the Taliban.

Afghanistan in 2001 consisted of 26 provinces. However, like most social phenomena and illicit activities, poppy cultivation was concentrated. The main poppy cultivating provinces under Taliban control were Helmand (52.2% of total poppy cultivation in Afghanistan), Nangarhar (24.0%), Oruzgan (5.8%), Kandahar (3.7%) and Balkh (3.2%) (UNODC, 2003a, 2003b, pp. 213–215). Approximately 94% of Afghan poppy cultivation was within areas under the control of the Taliban. The remaining 6% of cultivation occurred in areas controlled by the Northern Alliance, primarily in Badakhshan (3.0% of Afghan total cultivation).

Table 3
Opium poppy cultivation estimates 1993–2000 (hectares)

	Afghanistan	Myanmar	Lao PDR	Rest of world	Global total	Afghanistan as percent of global total
1993	58300	165800	26040	27267	277407	21.0
1994	71470	146600	18520	35889	272479	26.2
1995	53759	154070	19650	22440	249919	21.5
1996	56824	163000	21601	16190	257615	22.1
1997	58416	155150	24082	14200	251848	23.2
1998	63674	130300	26837	17008	237819	26.8
1999	90583	89500	22543	13578	216204	41.9
2000	82171	108700	19052	12029	221952	37.0
2001	7606	105000	17255	14433	144294	5.3
2002	74046	81400	14052	11572	181070	40.9

Source: UNODC (2003a, 2003b, p. 16).

These had consistently been the main poppy cultivating areas for the bulk of the previous decade.

Preliminary UNODC surveys in February 2001 indicated a massive reduction in poppy cultivation across Afghanistan. The complete poppy survey that followed confirmed these estimates. The total area under poppy cultivation in Afghanistan plummeted by 91% from 2000 to 2001 (UNODC, 2001). The two historically largest poppy cultivating provinces, Helmand and Nangarhar, both yielded nearly 100% reductions from their respective 2000 totals of 42,853 and 19,747 ha (UNODC, 2003a, 2003b, pp. 213–215). The vast majority of illicit cultivation in Afghanistan in 2001, after the ban, emanated from the non-Taliban province of Badakhshan, responsible for 6342 ha of poppy field (UNODC, 2003a, 2003b, pp. 213–215). Since Badakhshan was under the control of the Northern Alliance rather than the Taliban, and would not experience the crackdown, the national-level impact needs to be disaggregated. The extent of poppy growing in Taliban and non-Taliban-controlled areas is shown in Table 2. In Taliban-controlled areas, the enforcement action produced a 99% reduction in opium poppy cultivation.

The large percentage increase in poppy cultivation in the Badakhshan area controlled by the Northern Alliance in 2001 was small in absolute terms when compared to the reductions in the country as a whole. The increase may have been due

to one or more displacement effects. Spatial displacement may have occurred if some farmers moved from Taliban-controlled areas to avoid the enforcement crackdown. Offender displacement may have occurred if other farmers in Badakhshan tried to take up some of the slack by planting increased hectareage of poppy. Although poppy cultivation more than doubled in Badakhshan in 2001 from 2347 to 6342 ha, the impact upon the overall Afghan poppy cultivation was minor. This localized increase was equivalent to only 2.4% of the overall national reduction. Hence, although there was some discernible displacement of poppy cultivation to non-Taliban-controlled areas, its overall effect was largely negligible. In fact, from an evaluation perspective, the distinct pattern of poppy growing in Northern Alliance areas lends credence to the notion that reductions elsewhere were achieved via the Taliban's enforcement of the law.

The dramatic decline in poppy in Afghanistan produced a congruent reduction in opium production. In 2001, the whole of Afghanistan produced an estimated 185 tons of opium in 2001, a reduction of 94% from the 2000 yield of 3276 tons (UNODC, 2001). A market subject to a sharp drop in supply will produce a price increase. The available price data for Nangarhar and Helmand, the two key markets in Taliban-controlled Afghanistan, suggest that the price of opium rose

Table 4
Potential opium production estimates 1993–2000 (metric tons)

Year	Afghanistan	Myanmar	Lao PDR	Rest of world	Global total	Afghanistan as percent of global total
1993	2330	1791	169	320	4610	50.5
1994	3416	1583	120	501	5620	60.8
1995	2335	1664	128	325	4452	52.4
1996	2248	1760	140	207	4355	51.6
1997	2804	1676	147	196	4823	58.1
1998	2693	1303	124	226	4346	62.0
1999	4565	895	124	180	5764	79.2
2000	3276	1087	167	161	4691	69.8
2001	185	1097	134	210	1626	11.4
2002	3400	828	112	159	4499	75.6

Source: UNODC (2003a, 2003b, p. 16).

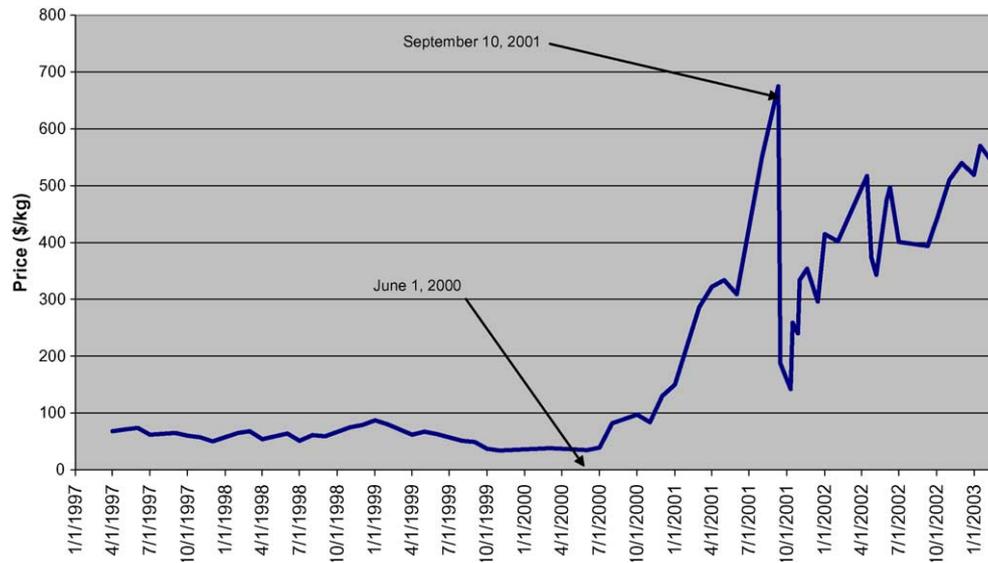


Fig. 2. Average dry opium farmgate price in Afghanistan (January 1997 to February 2003). Source: UNODC (2003a, 2003b).

dramatically during 2001, as shown in Fig. 2. The price rise occurred after the decrease in cultivation, perhaps reflecting a lag due to the gradual depletion of opium stocks. Such stocks would, in theory, be used to buffer against short-term opium shortages due to bad weather or other causes of poor harvests. However, the extent and role of opium stocks is uncertain because if there were major stockpiles to maintain supply over long periods, then the significant opium price increases might not have occurred. The price data is collected separately from the opium survey data and presents an independent verification of occurrences in the Afghan opium market. The price of raw opium rose rapidly across 2001 as the cultivation ban gradually began to bite in the opium marketplace (Fig. 2).

Impact upon neighbouring countries

It might be hypothesized that a reduction in poppy cultivation in Afghanistan would produce an increase in nearby countries if they were conducive to poppy cultivation. Pakistan and Iran border upon Afghanistan and have histories of illicit poppy cultivation, opium production and trafficking. It is therefore reasonable to identify them as possible displacement or catchment zones. However, in 2001 and 2002, there were no reported signs of poppy cultivation in these two countries, and it is likely that any major new planting would have been identified. However, upon further consideration, perhaps it is more likely that any highly motivated Afghan farmers would have relocated to northeastern Afghanistan while local farmers remained subject to local bans. Such an explanation would fit with the empirical findings.

No increases in poppy cultivation were identified in the central Asian states of Turkmenistan, Tajikistan and Uzbekistan that border Afghanistan to the north. This also fits with an explanation that any displacement would be to non-Taliban areas of Afghanistan. It is therefore concluded that displace-

ment across Afghanistan's borders, either in the form of displaced migrating Afghan farmers or as the result of a market effect (farmers in neighbouring countries tempted by higher opium prices) did not occur in either 2001 or 2002.

Comparison to Myanmar

Myanmar is included here as a comparison area because, along with the 'rest of the world' group, it effectively controls for variables outside of Afghanistan. Such variables include the global opium or heroin markets which could have influenced poppy cultivation within Afghanistan. In 2000, Myanmar ranked first in global poppy cultivation with Afghanistan second. Due to differences in yield, Myanmar ranked second in potential opium production and Afghanistan first. There are also several other key parallels between Afghanistan and Myanmar—they have similar land surface areas (though the population of Myanmar is larger), as well as, generally speaking, comparable political and socio-economic climates. Each had poorly developed economies and overall low human development rankings (INCSR, 2003; UNDCP, 2002). Both countries were ruled by harsh totalitarian governments which faced armed military opposition who controlled non-trivial areas of the country. Afghanistan is in southwest Asia and Myanmar in southeast Asia. Unlike the comparison areas considered above, Myanmar is not geographically close to Afghanistan and would not be a potential catchment area for displaced Afghan poppy farmers.

In 2000, Myanmar contained an estimated 108,700 ha of poppy or 49% of the global total. In 2001, it experienced the relatively minor change of a decline of 2200 ha of poppy cultivation. This was well within normal parameters for annual variation in Myanmar's poppy cultivation. While the country had been experiencing a gradual decline in cultivation since the mid-1990s, the 2000 total had been an increase upon the

1999 total. There is no reason to conclude that Myanmar experienced any unusual change in its area of poppy cultivation. There is certainly no change in cultivation that could remotely be interpreted as of similar magnitude to that occurring in Afghanistan. The comparison with Myanmar eliminates the possibility that the change in cultivation in Afghanistan is attributable to a cause relating to the global opium market. A global cause such as, say, a global blight that destroyed poppy crops, or a collapse of the global illicit heroin market, cannot be the cause of the decline in Afghan poppy cultivation.

Fourth comparison area: the rest of the world

In 2000, Laos ranked third in global illicit opium poppy cultivation but accounted for only an estimated 19,052 ha or 8.6% of the world total. Poppy cultivation in Laos had been declining from a peak of nearly 27,000 ha in 1998. In 2001 and 2002, Laos continued the trend of an annual decline of between 2 and 4000 ha. There is no evidence of any unusual change in Laotian poppy cultivation, and no change similar to that in Afghanistan.

Illicit opium poppy cultivation in all other countries aside from Afghanistan, Myanmar and Laos accounted for only 5.4% of the estimated global total in 2000. The level of opium poppy cultivation in other countries of the world combined had varied between 12 and 17,000 ha since 1996. In 2001, the rest of the world experienced an estimated 14,433 ha of cultivation, which, while a 2204 increase on the previous year, was not a particularly unusual change in absolute amounts. In fact the increase was wholly attributable to an increase in cultivation in Mexico. It seems unlikely that this change was induced by a global market effect in response to reduced supply in Afghanistan because Mexico supplies, for the most part, a different market. Even if the increase was in response to change in Afghanistan, its overall effect is negligible in comparison. Hence, there is no evidence in the rest of the world of any change in poppy cultivation similar or comparable to that in Afghanistan in 2001.

Discussion

The evaluation design

The bespoke nature of this evaluation means that it is not a wholly traditional quasi-experimental design. However, it eliminates plausible alternative hypotheses regarding change in the dependent variable (area of poppy cultivation), and combines this with an understanding of the mechanism of change. The following paragraphs in this section discuss these issues further.

Could the drop in poppy cultivation have been due to other change in Afghanistan such as severe weather, crop blight, other agronomy-related changes, or other local change? Severe weather can sometimes cause radical fluctuations in the extent of poppy cultivation, as that experienced in Laos in

the early 1990s (see Farrell, 1998, pp. 418–419; National Narcotics Intelligence Consumers Committee, 1995, p. 39). It was also the case that a drought in Afghanistan in 2000 may have accounted for the drop in poppy cultivation in that year relative to 1999 (BBC, 2000a) although there is no suggestion that the drought accounted for the far more significant drop in poppy cultivation experienced in 2001, particularly since the reductions did not occur in non-Taliban areas. In the present evaluation, any such local change due to drought or other causes would be equally experienced in non-Taliban areas of Afghanistan. The non-Taliban area of Afghanistan is a smaller geographical area but is otherwise matched for variables other than the presence of the Taliban. Further, it is clear that the sheer magnitude of change in poppy cultivation in 2000 was such that any alternative explanations of change would almost certainly have been proffered by an attentive media, local UN drug control officials or others working in the region. Severe weather and crop blight are easily recognized and would be well documented. Extensive migration of poppy farmers to areas outside control of the Taliban would have produced a gradual rather than a sudden decline in cultivation, reflecting a gradual migration process. There was undoubtedly some migration during the Taliban regime. However, if migration was sufficiently dramatic during the poppy ban enforcement then this is an explanation compatible with enforcement as the cause of the poppy reduction. Migration would also have resulted in more extensive increases in displaced poppy cultivation elsewhere in Afghanistan and in neighbouring countries. Another possible explanation was if herbicides had been used to eliminate the crops but this possibility was discussed and eliminated earlier. In short, this aspect of the research design serves to eliminate plausible alternative *local* causes.

Alternative causes of the drop in poppy cultivation could lie outside Afghanistan. A major drop in demand in the global opium and heroin markets could, in theory, produce a fall in prices that made it unprofitable to cultivate opium poppy. Such a hypothetical drop in demand could be caused by an equally preferable and cheaper or more easily available alternative to opium and heroin, or by a hitherto unknown cause. However, any such change in consumption would necessarily be sufficiently major, widespread and rapid as to be well documented in many Western and other countries. Aside from this qualitative explanation, the research design accounts for exogenous change. Myanmar and the ‘rest of the world’ serve as independent comparison groups that are susceptible to change in the global markets. As they did not experience any change comparable to that in Afghanistan, exogenous global causes can be eliminated as explanations of the change in Afghanistan. When the quantitative control is combined with the qualitative assessment, it is clear that any exogenous variable of sufficient import to induce the change in Afghanistan would have been detected. In short, this aspect of the research design serves to eliminate plausible alternative *global or exogenous* causes.

The strength of the present evaluation design is that it has been tailored to be appropriate to the requirements and context of the study. It triangulates qualitative and quantitative sources and an understanding of the mechanism of change. The approach allows conclusions to be drawn with a degree of confidence in their validity that is arguably unusual in social science research.

Would the evaluation design capture displacement effects? When undertaking this analysis, we had anticipated finding some increase in poppy cultivation in countries outside Afghanistan. It was expected that market forces reacting to an increased opium price would induce rapid planting of poppy elsewhere in southwest Asia, southeast Asia or elsewhere. Such a 'market effect' would be similar to, but distinct from the various forms of displacement. At least one reputable news source reported frantic poppy planting in southwest Asia in anticipation of the Afghan opium drought (*The Economist*, August 10, 2000). That no such increases were identifiable in either the 2001 or 2002 cultivation data could suggest such reports were unrepresentative. This does not preclude the possibility of displacement in the medium term although cultivation data for 2003 were not available at the time of writing and would be influenced by the subsequent resumption of cultivation in Afghanistan. Even if complete market-effect displacement had occurred by 2003 then there would still have been a short-run reduction in opium supply. In short, the evaluation design captures displacement effects for the duration of the intervention. Possible longer term displacement effects and the impact upon heroin consumption are discussed briefly in the next section.

Broader implications of the study

It is tempting, though probably of little value, to speculate along 'What if?' lines. What if the Taliban had remained in power in Afghanistan after 2001? Would a prolonged 65% reduction in the world's potential illicit heroin supply have resulted? If so, what would have been the impact upon demand for heroin, particularly in western industrial democracies which are the destination for a significant portion of the trade? Perhaps market forces, namely the increased price paid for raw opium, would have driven increases in poppy cultivation elsewhere in the middle to long term, or perhaps the Taliban enforcement effort would have proved unsustainable, though both these possibilities are only speculation. However, no significant immediate market-driven increases were identified in the various poppy-cultivating areas examined in this study.

More important than speculation are lessons learned and broader questions that arise. The evaluation raises issues relevant to evaluation, policing, crime theory, and drug policy that may go beyond the scope of this study. The events describe herein are a case study in which the offenders – albeit impoverished farmers – rapidly quit their offending (poppy cultivation had long been illegal) in the face of a credible

threat and enforcement action. There may be implications for criminological theory and crime prevention theories that examine deterrence. Even though the inhumane and draconian policies of the Taliban are clearly not something that should be replicated in free democratic society, the case study may offer a theoretical limiting case that is otherwise informative.

The events in Afghanistan are a unique case study of drug control policy. What was the impact upon opium and heroin consumption? A forthcoming study by Peter Reuter is likely to suggest that the impact on heroin consumption, if any, is minimal in the major consumer markets (Reuter, 2003, personal communication to author in Denver, CO). What are the lessons for drug law enforcement? Previous national-level enforcement actions against poppy have occurred in India, Iran, Pakistan, Thailand and Turkey. The specifics of the enforcement activities differ from those described here and there is little by means of proper evaluation of their effectiveness, perhaps because they occurred at a time when formal evaluation of such policies was rarely considered. What the present case study makes clear is that poppy cultivation, even when widespread and seemingly entrenched as in Afghanistan, can be reduced. However, the implications for national and international drug policies are somewhat opaque. Chief among the unresolved issues is displacement. In previous instances of national-level reductions in poppy, cultivation appeared to spring up elsewhere in the years that followed: Afghanistan more than taking up the market slack from India, Iran, Turkey and Pakistan, and Myanmar more than taking up the slack from Thailand. It has, however, been suggested that even a short-term reduction in opium supply can produce temporary declines in heroin consumption and, more significantly, in the intake of new illicit heroin users (see Moore's, 1990, pp. 136–137, enlightening discussion of the breaking of the French Connection trafficking routes via Marseilles). If opium stocks absorbed the immediate reduction in supply from Afghanistan (perhaps if traffickers anticipated the Taliban enforcement action), much of the resulting price increase may have been absorbed by the time the product reached the streets in western countries. If so, then without any sustained reduction in supply, the 1-year reduction may have gone largely unnoticed in consumer markets. These are empirical questions that remain to be addressed. There may also be some gain from comparing the present study to the apparently successful poppy reduction efforts in Iran, India, Pakistan, Thailand and Turkey.

With the ousting of the Taliban government at the end of 2001, the possible medium and long-term displacement effects on poppy cultivation will never be known. While there was no immediate displacement, it is uncertain where medium-term displacement would have occurred. The most likely candidates were neighbouring Southwest Asian countries, poppy cultivating area in Southeast Asia (Myanmar, Laos, Vietnam) and the Andean region (Colombia). However, significantly increased opium production in either region would require new or expanded heroin trafficking to serve the European market. Heroin trafficking from Colom-

bia could have expanded on existing routes and perhaps on routes established for cocaine trafficking, but perhaps even this would have caused a shortage and street price increase in European markets. Such predictions are, however, precarious at best because market forces can easily produce unanticipated consequences in the medium and long term.

Conclusion

The main conclusion of the evaluation is clear: all available evidence suggests that the 99% reduction in illicit opium poppy cultivation in Taliban-controlled areas of Afghanistan in 2001 is attributable to the enforcement activity. This produced a 65% reduction in the potential global illicit heroin supply from the 2001 harvest.

Acknowledgements

This paper was presented to the annual meeting of the American Society of Criminology 2003 in Denver, CO, November 18–23, 2003. For correspondence on the subject of this study we owe particular thanks to one United Nations official who is anonymous for present purposes but who was present in the region during much of what is discussed relating to the ban. We thank Dr. Thomas Pietschmann of UNODC for forwarding relevant materials and documents, Professor John Eck for a discussion on market effects and the link to displacement, and Professor Peter Reuter for comments on the interpretation of findings.

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