

1-2011

Material Support: Counternarcotics vs. Counterinsurgency in Afghanistan

Jonathan D. Kulick
Pepperdine University, jonathan.kulick@pepperdine.edu

Jonathan P. Caulkins
Carnegie Mellon University

Mark A. R. Kleiman
University of California - Los Angeles

Follow this and additional works at: <https://digitalcommons.pepperdine.edu/sppworkingpapers>



Part of the [International Economics Commons](#), and the [Public Affairs, Public Policy and Public Administration Commons](#)

Recommended Citation

Kulick, Jonathan D.; Caulkins, Jonathan P.; and Kleiman, Mark A. R., "Material Support: Counternarcotics vs. Counterinsurgency in Afghanistan" (2011). Pepperdine University, *School of Public Policy Working Papers*. Paper 19.
<https://digitalcommons.pepperdine.edu/sppworkingpapers/19>

This Article is brought to you for free and open access by the School of Public Policy at Pepperdine Digital Commons. It has been accepted for inclusion in School of Public Policy Working Papers by an authorized administrator of Pepperdine Digital Commons. For more information, please contact bailey.berry@pepperdine.edu.

Material Support:

Counternarcotics vs. Counterinsurgency in Afghanistan

Jonathan D. Kulick, Pepperdine University

Jonathan P. Caulkins, Carnegie Mellon University

Mark A.R. Kleiman, University of California, Los Angeles

Abstract

Microeconomic analysis of counternarcotics strategies in Afghanistan suggests that current policies lend material support to the enemy. Vigorous enforcement can increase the flow of funds to insurgents and other parties that profit from trafficking. Rural-development programs, promoted as elements of a counternarcotics strategy, are open to some of the same objections. The benefits of drug-fighting in Afghanistan for consumer countries in Europe and North America are likely to be modest. Anti-corruption efforts in Afghanistan and demand-reduction programs both in Afghanistan and in consumer countries, insofar as they are feasible, could serve both counternarcotics and counterinsurgency objectives.

Introduction

Afghanistan accounts for some 90 percent of global production of illicit opium, up from about 75 percent a decade ago.^{1, 2} Since the 1970s the country has been wracked by conflict. Groups of violent political actors—both insurgent groups and “warlord” organizations³—derive revenues from the opiates⁴ trade directly through trafficking or indirectly by taxing poppy farmers, extorting protection money from dealers, and providing “security” services to dealing organizations. Government officials also profit from graft and as shadow-state principals in the opiates trade.⁵

The superficially obvious prescription, for the United States and its International Security Assistance Force (ISAF) allies, is to aggressively pursue counternarcotics policies as a way of reducing insurgents’ and warlords’ resource bases and also officials’ temptations to participate in corruption. And it is true that if the Afghan opiates market disappeared entirely (for example, from an upsurge in lower-cost production elsewhere) the insurgent cause would suffer and security and governance in Afghanistan would improve substantially.^{6, 7} But a complete remission of drug dealing is not a plausible outcome of any feasible policy within relevant time horizons, and partial reductions in production tend to be counterproductive from a security-and-governance perspective.

New U.S. (and U.S.-dominated ISAF) policy partially reflects this analysis, reversing a longstanding emphasis on the eradication of poppy crops.⁸ The reasoning was direct, and largely sound: it is not feasible to eradicate enough of the crop to substantially affect export volume or heroin use in downstream countries, and destroying farmers’ livelihoods encourages sympathy with the insurgency. Furthermore, reducing production raises the farm gate price of opium more than proportionally, thereby increasing the total revenue available to opium growers, and thus the potential yield of taxes imposed on them by violent political

actors or corrupt officials.⁹ Ironically, this year's poppy blight appears to have achieved precisely this effect, and done so in the first full year in which the United State was officially no longer trying to achieve it.¹⁰

The new strategy pursues higher-level traffickers connected to the insurgency, while continuing to entice farmers away from poppy growing by offering more attractive licit opportunities. But there is reason to doubt that either half of that strategy creates a net benefit in terms of security and governance. Both approaches, if they work, increase prices and thus total black-market revenues. Intensified enforcement also tends to increase the share of total revenues that goes to wielders of force and influence, as opposed to the production-oriented activities of growing poppy, refining opium, and exporting opiates.

Thus expanding efforts against opiate suppliers generally is more likely to increase than to reduce traffickers' revenues and power. In other words, one of the problems recognized with eradication applies equally to all forms of supply control, not just eradication. Narcotics traffickers in Afghanistan have a near monopoly on heroin exports, the demand for which is highly price-inelastic. And reducing the supply of heroin not only benefits traffickers in general, it disproportionately benefits those who pose the greatest security threats.

Insofar as "alternative livelihood" or "alternative development"¹¹ efforts reduce supplies of, and raise prices for, opium, they—like eradication—have a natural tendency to enrich insurgents, warlords, and corrupt officials. Whatever its other merits, rural development in Afghanistan should not be sold as counterinsurgency.

Nor are the losses on the counterinsurgency side balanced by gains in controlling drug abuse. Reducing the supply of opiates from Afghanistan does next to nothing to shrink the drug problem in the United States and does little in other ISAF countries.

Alas, drug-trafficking problems in ill-governed states are intractable to most practicable interventions; the activity is more easily moved around—within the country or to another country in the same market—than sharply diminished.¹² Policymakers should remain skeptical of the capacity of almost any counternarcotics intervention to achieve its desired outcomes. It is likely that no policy can satisfy the demand for a “solution” to Afghanistan’s opiates-production problems, and it is not clear that more is, generally, better. In such a situation, the primary maxim may not be “Fix the problem” but “Do no harm,” or, at least, “Do as little harm as possible.”

The analytic framework of microeconomics—despite its necessary abstractions from some of the complexities of the situation on the ground—can be a useful tool in assessing the likely consequences of various counternarcotics strategies on both drug-market outcomes and security and governance in Afghanistan. How the “drugs-terror system” will respond to interventions, or even how it will evolve over time apart from the effect of interventions, depends strongly on details such as the sizes of inventories at various stages of processing (from raw opium to heroin), the decisionmaking processes of Afghan farmers, and the capacity and limitations—corruption aside—of Afghan drug enforcement.

This is a complex and poorly understood system, so all forecasts and estimates of effects deserve wider-than-normal confidence intervals. That said, while outcomes might be different from the ones we project they are unlikely to be so different as to reverse the direction of our conclusions. Uncertainties about data and the forces at work are as prone to

underestimate the damage done to security-and-governance objectives by drug-control efforts as to overestimate it.

Background

Premises underpinning analysis

Drug production and distribution are market activities. Participants act out of self-interest, not ideology, and the system includes many actors whose actions are coordinated by price signals.¹³ In the absence of centralized or monopoly control, microeconomics is the essential analytical perspective.

The Government of Afghanistan has limited capacities to enforce its will. The central government has no meaningful control over large sections of the country, including insurgent-held areas and nominally loyal areas controlled by warlords. Much of the functional local governance is informal, conducted neither by well-defined entities with local sovereignty nor by administrative departments accountable to Kabul, but by traditional kin-group structures. Local, tribal, and ethnic identities compete with the state in defining loyalties. Moreover, corruption limits capacity both nationally and locally.¹⁴

Security in Afghanistan is problematic. Throughout much of the country, not coincidentally including poppy-growing areas, personnel of any outside organization—whether based abroad or in Kabul—cannot function without either military escort or cooperation bought from (corrupt) local power brokers.

The insurgency is neither monolithic nor highly dependent on the opiates trade for its revenues. “The Taliban” encompasses at least three networks of insurgents (even apart from the Taliban in Pakistan), and many additional militias ally with the Taliban only because—and only for so long as—it is expedient. Thus actions against insurgent-traffickers do not

merely weaken a monolithic foe, but influence the competitive balance of power within a complex array of political entities. Furthermore, there are sources of income besides opiates for both the allied militias (e.g., extortion and other general criminal activity on their territory) and the core insurgent groups (e.g., subventions from sympathizers abroad and smuggling of goods other than drugs).

Heroin production in Afghanistan

Heroin is produced and distributed through a multilayered network with little direct contact or coordination between nonadjacent layers. Farmers grow poppies (in addition to other crops—few grow poppies exclusively¹⁵). Farmers and hired labor harvest opium latex. This is a labor-intensive process, and labor supply can be the limiting factor of production.¹⁶ The latex is sold at a local bazaar or to traders who visit the farm. The price at the bazaar varies by year, region, quality, and point in the growing season,¹⁷ but is only slightly higher than the farm gate price,¹⁸ reflecting a smoothly functioning market without substantial monopsony power. Lately prices have averaged \$130/kg, or almost double what they were last year, before the blight.

Farmers can often make more money growing poppies than other crops, but they shift between crops in response not only to perceived profits, but also risks and the ability to get their crop to market.¹⁹ Perhaps the largest driver of changes in area under cultivation is not eradication or enforcement risk, but rather last year's opium prices as compared to current prices of other crops. Low opium prices in 2008 contributed to reduced cultivation in 2009. We should anticipate that this year's higher prices will stimulate expansion of cultivation to districts not planted this year.

Farm gate opium prices have not quite been bid down to the opportunity cost of the labor and land used in its production; there is still some risk of legal sanction, criminal violence, or moral premium,²⁰ making poppy cultivation generally more remunerative. However, farm gate prices should probably be seen as fair-market compensation for the farmers' efforts, not as reflecting a high profit margin.

Afghan opium and even heroin are agricultural commodities. Opium latex is directly a farm product; heroin is a processed farm product, but processing is simple—more like brewing beer than making pharmaceuticals. The proportion of value directly attributable to farm products is much higher for Afghan heroin than it is for American breakfast cereal.²¹

Heroin is produced from opium and precursor chemicals, notably acetic anhydride. The proportions are roughly seven kg of opium plus two kg of acetic anhydride to make one kg of heroin.²² That kilogram, which contains $7 \times \$130 = \910 worth of opium, is worth roughly \$2500 in Afghanistan. That means that conventional farming costs account for about 35 percent of the value of the heroin in Afghanistan. The remaining 65 percent is not pure profit; it includes compensation for precursors, labor, weapons, bribes, etc. However, all that 65 percent essentially motivates or rewards criminals and criminal activity, so long as we include corrupt and violent political actors within the definition of criminals.

The markup from production to final sale is as much as 200-fold (Table 1 shows the markup of one kg of heroin, from Afghan farm gate to street-level retail sale in the UK).

UNODC estimates Afghan opium production at roughly 7000 tons annually.^{23, 24} If that estimate is correct, farm gate revenues are roughly \$900 million,²⁵ and total revenues of opium-affiliated criminals within Afghanistan (not counting the farmers) are on the order of \$1.5 billion. Based on the markup to heroin prices in neighboring regions of adjacent

countries, another roughly \$1.5 billion is generated by smuggling heroin (and some opium and morphine) out of Afghanistan, for total criminal revenues from opiate trafficking of about \$3 billion, or roughly one quarter of Afghan GDP.

The portion of that \$3 billion that goes to the Taliban is subject to considerable debate; estimates run from about \$40 million (a little more than one percent of the total) to four or five times that amount.²⁶ The factors that limit insurgents' share of the total are not well understood, but clearly the current situation is not nearly the worst possible in terms of money available to insurgents.

Efforts against poppy cultivation in the north have pushed most production into the south, where the insurgency is stronger,²⁷ as illustrated in Figure 1. However, southern-produced opiates still flow northward,²⁸ so at least some of the Taliban's nominal political rivals must be helping to export heroin made from poppies whose production enriches the insurgency. They are unlikely to be persuaded to do otherwise in the absence of alternative, non-Taliban-linked sources of opiates for export and a reason—perhaps differential enforcement effort—to prefer the non-Taliban-linked product.

Afghanistan dominates the market in the Eastern Hemisphere; Afghan heroin prices are one-third to one-fifth those in its nearest competitors. It has little penetration in the Western Hemisphere (where consumption is dominated by the United States and production by Mexico and Colombia), but more than 90 percent of global consumption of illegal opiates is in the Eastern Hemisphere. Afghanistan's enduring dominance is made clear by Figure 2, which shows global opium production since 1995.

Why reducing supply increases revenues

Both enforcement attention and trafficking revenues are divided along two dimensions: “horizontally” among different types of criminals, and “vertically” up and down the supply chain.

A simple analysis shows that reducing the supply of opiates from Afghanistan—by whatever means—increases revenues to narcotics traffickers. (A more rigorous analysis of how counternarcotics policies affect revenues at different points along the drug-distribution chain appears in a later section.)

The money available to insurgents, warlords, and corrupt officials depends on:

(1) The volumes of opium and heroin produced, processed, and exported, which in turn are the products of total consumption worldwide and Afghanistan’s market share;

(2) The prices of those commodities; and

(3) The share of the total revenue that can be extracted as taxes, bribes, or protection payments.²⁹

The volume of heroin consumed depends far less on conditions in producer countries than in consumer countries: end-user demand and the presence of illicit distribution networks capable of delivering drugs at retail. There is every reason to expect global demand for illegal opiates to remain robust for the foreseeable future.

Since the price of heroin as exported from Afghanistan constitutes only a small fraction of retail prices in consumer countries—a fraction that shrinks with distance—and since land suitable for poppy growing is not scarce (less than five percent of Afghanistan’s arable land is planted in poppies each year), enforcement targeted at production will only

weakly affect end-user prices and therefore only weakly affect volumes consumed.³⁰ The insensitivity of final demand to price can be concealed as opium stockpiles buffer market fluctuations; the 2000–2001 ban on poppy production spectacularly reduced cultivation but did not reduce heroin exports by even a close-to-comparable proportion.³¹

Although in theory many countries could produce heroin, in practice once illegal drug production becomes established in a particular location it tends to remain there. In a mutually reinforcing feedback loop drug production undermines government control and weak government control facilitates drug production.³² Moreover, established trafficking routes and relationships—the relational capital that is the central asset for any criminal organization—are fixed assets that cannot easily be transferred. Those assets constitute a barrier to exit from the industry, further accentuating the markets' inertia.

Hence increasing the costs of doing business in Afghanistan to the point where other countries (e.g., Pakistan or Burma) became relatively low-cost producers is a necessary but not sufficient condition for Afghanistan to lose its dominant position in the opiate-export market. Further, the scenarios under which Afghanistan loses its comparative advantage in illegal opium production are either wild cards (synthetic opiates undercut the market for plant-derived opiates) or are themselves problematic (a competing country such as Pakistan becomes a failed state).

Conversely, even a dramatic fall in Afghan opium prices would not allow it to gain substantial market share for the simple reason that it already dominates global markets. Price declines might not even greatly expand market share in the (relatively small) Western Hemisphere market; Afghanistan already outcompetes Western Hemisphere suppliers on price, but has yet to make substantial inroads because Colombia and Mexico are closer to market and have established distribution networks. Thus both the size of the world opiate

markets and the Afghan share of those markets can probably be treated as largely invariant to policy interventions over the next five years, if not longer, absent radical changes in security and governance in Afghanistan or potential competing export countries.

Agricultural commodities are subject to a classic paradox: bad harvests are good for landowning farmers, except for those whose crops are unusually hard hit. When yields are high, landowners collectively suffer because prices decline. Landowners collectively benefit when poor harvests or restrictive policies drive up prices, at least when there are no close substitutes. If a blight affected only one variety of apple, blight-affected growers would not benefit; consumers would just substitute other varieties. Likewise, if the blight affected all apples but in only half the apple-growing region, blight-affected growers would likely be worse off. But a blight that reduced the harvest uniformly would benefit all growers. At least in the short run, there are few substitutes for Afghan opium—except for stockpiled Afghan opium from previous harvests.

Efforts to suppress opium production act like a blight; they are therefore likely to *increase* Afghan drug-market revenues. This applies to reducing poppy production via rural-development efforts or attempting to buy the opium crop as well as to eradication; anything that reduces the supply of opium increases its price, and, since retail demand is very inelastic to prices near the source, increases revenue as well.³³ Seizing opium or heroin in Afghanistan has the same general effect, and seizures in downstream markets are even worse; they suppress consumption only marginally while—from Afghanistan's perspective—they increase quantities shipped to make up for those seizures.

Division of trafficking revenues among insurgents, warlords, and corrupt officials

Policies also influence the “horizontal” division of revenues among rival market participants. More intensive enforcement is likely to do so in a perverse way from a counterinsurgency perspective.

Insurgents

There are at least two reasons to fear that increasing drug control will increase not only the total criminal revenues from trafficking, but also the share that goes to insurgents.

The division of trafficking profits among trafficking groups and those who provide services or collect extortion payments is determined by a very complicated political-economic balancing. Stirring the pot can have effects that are hard to predict. Since, currently, insurgents capture only a small share of the roughly \$3 billion in potential trafficking-related revenues, redistributing revenue shares could make things much worse. Highly strategic market interventions might reduce insurgents’ share of the pie still further. However, drug markets often respond to interventions in unexpected ways. Thus some humility may be appropriate when contemplating strategies for reengineering drug markets.

Moreover, tougher drug control generally is more likely to shift market share toward rather than away from insurgents.³⁴ Opiate trafficking in Afghanistan is not centralized; it involves many competing organizations, farmers and growing areas, and export routes. In addition to extracting taxes on poppy growing and other drug-market activities in areas they control, insurgent groups can become more directly involved in the traffic by selling protection to traffickers and deploying their capacity for intimidation and corruption to shelter traffickers’ activities from enforcement. The value of those protection services increases with the level of enforcement activity.³⁵

Increased enforcement is necessarily concentrated in areas under government control; the success of the campaign against poppy growing in most of Afghanistan has concentrated production in insurgent-held areas.

Thus more enforcement tends to produce higher total revenues, an increased share of the illicit take for purveyors of protection, and a diminished share of activity in areas under government control. All three effects tend to increase financial flows to insurgents, so the natural tendency of drug-suppression activity is to aid the insurgency rather than to suppress it. That might not be true if suppression efforts could be focused on the part of the trade linked to or taxed by the insurgents, but the natural tendency of efforts by the Afghan government and its allies is to concentrate in areas controlled by the government. Even there, prudent local officials may find it inadvisable from a personal-safety perspective to pay too much attention to dealers with armed allies.

Parallel analysis can be adapted to cover two other contributions of the opiates trade to security-and-governance problems: the support it provides to warlords not affiliated with the insurgency and the temptations it creates for corruption within Afghan government agencies.

Warlords

Some of these warlord enterprises, especially along the northern borders, are more actively involved in the opiates traffic than are the insurgent groups. They are engaged as principals actually buying, transporting, and selling drugs, not merely as taxing authorities or purveyors of protection services. Their revenues depend on prices, volumes, their market share, and the share of the value added within the supply chain that they can capture for

themselves. If enforcement drives up prices while leaving volumes largely unchanged, its tendency is to benefit warlords as well as insurgents.³⁶

Moreover, insofar as the warlords have a competitive advantage over “pure” drug traffickers without armed backing or political clout being better able to deploy violence and corrupt influence in defense of their activities—increased enforcement tends to increase the relative value of that advantage. For example, increased border security is more likely to be a problem for small-scale smugglers than it is for the smuggling enterprise affiliated with a warlord army or a former (or current) army or police commander’s gang. Small-scale operators who are not entirely deterred by increased enforcement have three choices: they can accept increased arrests and seizures as a cost of doing business, they can change their operations in more or less expensive and inconvenient ways to evade enforcement, or they can offer bribes to officials and other power brokers. Warlords, with their private armies, have a fourth option: they can use violence or the threat of violence to intimidate enforcement agencies. (This can be combined with bribery, especially where traffickers have political as well as military muscle.) If increased enforcement raises costs for warlords and the traffickers they protect less than it raises costs for competing trafficking organizations, the result will be larger profits and greater market share for the warlords.

Corrupt officials

Corruption creates many problems. Some are direct; corrupt officials may be less diligent than honest officials would be. Some are systemic; the money from corruption can flow up the chain from officials to those who appoint them, thus in effect closing the path to public service to those unwilling to channel cash to their superiors. Others abet the insurgency directly; the reputation for corruption saps public support for the government, especially when competing power centers are believed to be less self-serving.

Anticorruption enforcement has only a limited capacity to reduce the size of the problem so long as corruption is supported by the broader political culture and individual officials have discretion to confer great benefits or impose great costs on private-sector actors. But it may be worth expanding that effort anyway, because corruption arrests can indicate the government's non-acquiescence in corrupt practices, with possible benefits in its level of public support.³⁷ The higher into the government corrupt influence reaches, the harder it will be to mount credible anticorruption efforts aimed at lower-level officials. The 2010 trial of a police general for facilitating the drug trade across the Iran and Turkmenistan borders is a promising development in this regard.³⁸

While anticorruption efforts can help counternarcotics-enforcement efforts, the converse is less likely to be the case. The greater the enforcement pressure, the greater the benefits enforcement officials can confer on traffickers by turning a blind eye to their activities and by interfering with the activities of their competitors.³⁹ (Again, as with traffickers' profits, this is true under the conditions that we believe obtain in Afghanistan; if enforcement were perfect, then there would be no opportunity for corruption.) If enforcement is to be stepped up, the need for better-trained, better-disciplined, and better-paid counternarcotics police becomes all the greater. Even honest drug-law enforcement relies heavily on information from some participants in the illicit traffic to make cases against other participants, and traffickers can exploit this by informing on one another to achieve competitive advantage. This makes it all the more difficult for officials running anticorruption efforts to distinguish honest from corrupt enforcement activity.

The value to traffickers of corrupting enforcement agents—an activity described as currently inseparable from most drug trafficking in Afghanistan—can be reduced in at least two distinct ways. Simply cutting back on the level of enforcement effort will tend not only

to reduce the total monetary value of the drug traffic but also to reduce the share of total revenues that corrupt enforcement agents can extract. The alternative approach is to multiply the number of agencies whose officials have investigative and arrest powers over any given trafficker, thus reducing the capacity of any one agent or agency to provide a “license” to traffic. That strategy is contrary to the usual recommendation to create a single elite drug enforcement unit, but efficiently providing corrupt enforcement may be worse than inefficiently providing more nearly honest enforcement.⁴⁰

Effects of rural-development programs

Economic development is central to any strategy to strengthen the government against insurgents, criminals, and other armed unofficial actors. Indeed, there are many rationales for promoting economic development in Afghanistan, including via programs targeting opium farmers. However, asking those programs to shrink drug-trafficking profits merely sets them up for failure.

That improving economic opportunities for farmers in drug-producing countries should not be viewed as a drug-control program or judged by its success in those terms is a commonplace in the development community. But many in the drug-control community view rural development as a drug-control strategy, alongside interdiction, treatment, and other interventions. Furthermore, some hold unrealistic hopes for the ability of rural development to advance counterinsurgency by affecting drug markets (beyond shifting the location of production). This section challenges those beliefs.

Rural development is not a counternarcotics program

Offering carrots is intuitively appealing and often more feasible politically than wielding sticks, and rural-development programs have been implemented in a host of drug-

producing countries, sometimes actually reducing local production. However, there is not a single documented instance in which crop substitution has had any meaningful impact on U.S. drug use, or even on reducing drug production in a large region.⁴¹ This is not for lack of trying, as U.S. experience with coca growers in South America has demonstrated. Some counter that the problem is with crop substitution and that more sophisticated forms of alternative development are needed. However, the problem is fundamental to all interventions that try to woo farmers away from growing the crops from which expensive illegal drugs are made.

If some growers are convinced to switch, others will take up their slack. Folklore holds that peasant farmers grow illegal drug crops only out of dire necessity; if they could earn even subsistence wages they would gladly opt out of the illegal economy. In fact, for a sufficiently large minority of growers as to determine the outcome, poppy is simply a crop to be grown along with others when it is in their interest to do so.⁴² The marginal utility of income declines sharply for middle-class residents in wealthy countries; yet wherever the knee is in that curve, Afghanistan is so poor that its farmers need not wonder whether or not the next Afghani will improve their welfare.

Even if rural-development programs could hugely increase the returns from legal crops, drug traffickers can easily raise the prices they pay to compete. Farmers' earnings account for less than one percent of the retail price of heroin in rich countries, and less than ten percent of the retail price even in Afghanistan's poor neighbors. Therefore, even if rural development works as intended, its principal effect will be to raise farmers' earnings, not to reduce illegal-crop cultivation.

There will always be farmers somewhere in the world willing to grow an illicit crop, even if economic development in one country makes that country's farmers no longer the

low-cost producers. So the usual conclusion is that rural development might help a given source country even if it does not disturb global production. Indeed, in the long run, that is a reasonable way to think about rural development even for Afghanistan. If in 30 years Afghanistan is a stable middle-income country, its poppy growing might all have shifted to other, poorer countries. However, Afghanistan is by far the lowest-cost producer at present, so the total volume of opiates produced in Afghanistan will depend almost entirely on the demand in importing countries. (Inventories can buffer year-to-year changes, but eventually whatever is sold must be produced, and whatever is produced and not seized will eventually be sold, since neither opium nor heroin is perishable.)

So in the short or even medium run, when rural development or other factors eliminate Afghan production in some districts, the displacement is likely to be to somewhere else in Afghanistan, not to another country. Furthermore, given how little of the world market is supplied by other countries, it would take unprecedented growth in both absolute and percentage terms for other countries to replace any substantial share of Afghan production within the next five years.

Rural development in poppy-growing areas is not a counterinsurgency program

If the only objective of a rural-development program were to reduce the drug supply in destination countries, it could be thought of as a benign failure. Indeed, to the extent that rural-development efforts funded by counternarcotics ambitions are really just economic development masquerading as counternarcotics, some might view it as a clever way to fund what they see as “good” interventions (development aid) from “dark” (counternarcotics) budgets.

However, in Afghanistan, the downside is potentially much worse. The Taliban do not single out the opium trade for taxes or protection payments because of Koranic proscriptions; they collect money from anyone who has it and who is not in a position to say no. So do other powerful actors—criminals, warlords, and corrupt officials. Inasmuch as all economic activity is potentially subject to taxation or extortion, development programs can create revenue streams for local power brokers. Even transporting agricultural aid into a region creates opportunities to demand payments to ensure safe passage. Furthermore, rural-development efforts driven by a counternarcotics agenda that are channeled toward poppy-growing areas are de facto being channeled toward provinces where the insurgency is relatively stronger and government control relatively weaker, since that is where the poppies are now grown. This uncomfortable conclusion should at least lead decisionmakers to require a higher-than-usual degree of confidence that a given rural-development program is effective before putting it into effect, but it may justify a fundamental reevaluation of where in the country alternative development should be pursued.

A simple calculation suggests that this could be a first-order concern. Some claim that the Taliban assess a 10–20 percent tax in the areas they control.⁴³ If donors were to spend hundreds of millions of dollars annually on rural-development programs in vulnerable areas, the increase in extortion revenues would rival some estimates of what the Taliban earn from the opiates trade.⁴⁴ Even if less development effort goes on in Taliban-held territory the Taliban can still extract a share of the supplies that must pass through their territory on the way to projects in government-held areas.⁴⁵

This suggests targeting rural-development assistance where extortion taxes are relatively low and are collected by less-objectionable parties. (Common criminals are presumably less objectionable than insurgents; the relative status of corrupt officials is

another question.) For the part of alternative development that masquerades as counter-narcotics, that means rural-development programs could be given as a reward to provinces that have rid themselves of poppies, rather than focusing on the areas that now grow the most poppies, since the provinces that continue to grow poppies are precisely those where the insurgents are strongest (see Figure 1).

Given the damage that poppy growing does to security and governance, preventing the introduction or reintroduction of poppy growing in areas that are nearly poppy free is a worthwhile objective. The threat of eradication—backed by only occasional actual eradication—might be enough to keep farmers in areas that are now poppy free from returning to poppy growing. Eradication in areas with widespread growing adversely affects many farmers; eradication in areas that are largely poppy free directly affects only the few who deviate from local norms and can achieve a high probability of a given plot being eradicated with relatively modest total amounts of eradication

On the other hand, concentrating poppy growing in insurgent-dominated areas gives farmers taxed by the Taliban a virtual monopoly in the opium trade, increasing the revenues available to the Taliban. A pure realpolitik strategy would sacrifice a portion of the relatively stable poppy-free areas to become poppy-producing competitors to the Taliban-controlled lands, while still keeping most of the non-Taliban areas poppy free. But justifying that in front of news cameras may be one of the few tasks that makes eliminating the drug trade look easy.

The more practical but still dramatic steps would be (1) stop pretending that “rural livelihoods” is a drug-policy initiative and (2) pay attention to how alternative development affects the income not only of poor farmers but also of the insurgents who tax them.

Effects of drug enforcement on Afghan drug revenues along the distribution chain

This section provides a more detailed analysis of why constraining Afghan opiate production will increase—not reduce—total revenues of the Afghan drug trade. It can be skipped without loss of continuity by those who already grasp the economic logic.

The key parameter in this analysis is the price-elasticity of demand—the percentage change in consumption resulting from a one-percent increase in price. As with most goods, drug consumption responds to price; when the retail price goes up, consumption goes down, somewhat in the short run, more in the longer run.⁴⁶ Estimates in the literature vary, and the true value probably varies according to the relationship between prices and incomes: the more of a consumer's income a drug accounts for, the more he has to cut back if the price goes up. But a reasonable guess at the average *retail* price elasticity is -0.75 : that is, a 10-percent increase in retail price would lead to a 7.5-percent decrease in consumption. (An elasticity of -1.0 , “unit elasticity,” means that consumption decreases proportionally to an increase in retail price, leaving revenue constant. An elasticity of -0.75 , reflecting less sensitivity of consumption to price, is in the range called “relatively inelastic,” where a retail price increase leads to a revenue increase.)

On its path from the farm to a foreign consumer, a bit of opium (later, heroin) might be bought and sold several times within Afghanistan, several times in transit countries, and as many as five times within the final-market country. Each transaction occurs at a lower level of the market and at a higher unit price. The effect of drug enforcement in Afghanistan on production, consumption, and profits overall and by market level depends on three factors:

(1) The retail price-elasticity of demand, and how retail elasticity in different submarkets is aggregated and reflected up the distribution chain toward the source. The resulting elasticity of demand with respect to the Afghan *export* price is low. So enforcement that drives up Afghan export prices suppresses consumption only modestly and thus increases total revenues of the Afghan opiates sector.

(2) How parallel producers/suppliers compete for market share and how enforcement affects the outcome of that competition. Enforcement has some limited ability to shift market share from one set of traffickers to another by creating risk differentials.

(3) How enforcement at one level of a distribution chain affects prices, volumes, and net revenues both further up the chain (i.e., towards the farmer) and further down the chain (i.e., towards the consumer).⁴⁷ Armed political actors benefit from seizures downstream of the market levels from which they derive profits, because traffickers must pay to replace the lost drugs; a kilogram of heroin seized contributes just as much to the demand for opium as a kilogram of heroin consumed.

Price-elasticity, and how it is reflected up the distribution chain

When aggregating across different markets supplied by one overall distribution chain, the overall elasticity of demand is the weighted sum of the elasticity in each submarket, weighting by the volume demanded in each submarket.⁴⁸ Most of the opiates exported from Afghanistan are consumed in Asia.⁴⁹

When the export price increases, consumption in downstream markets is not affected by the same proportion in every market. Some downstream markets will see a larger proportional change in consumption, acting as “shock absorbers,” partially insulating other downstream markets from the effects of those price changes.⁵⁰ In effect, customers who are

richer (and therefore less responsive to price changes) can “bid away” supplies from poorer customers.

Every market level has its own demand and supply curves, which are all closely related. The demand at one level is said to be “derived” from demand at the next higher level. Likewise, prices differ across market levels but are related inasmuch as the price at one level is the cost of goods at the next lower level. However, the slopes of the demand curves differ across market levels. Demand at higher market levels is relatively less responsive to price changes at those market levels than is the corresponding demand at lower market levels to price changes at those market levels, because it is the retail consumer who eventually determines total volume, and the retail price depends only weakly on prices further up the chain.

Opiate prices increase enormously down the distribution chain—more than fifty-fold between export from Afghanistan and retail in wealthy countries (where the elasticity of retail heroin demand has been measured most). Therefore a large proportional increase in the Afghan export price will yield much smaller proportional increases in retail prices. So a given change in volume consumed is associated with a small percentage change in retail price and a larger percentage change in export price. Price responsiveness (elasticity) is therefore much smaller at the Afghan export level than at the retail level.⁵¹

For example, if the elasticity of retail demand for heroin in Europe and Asia, with respect to the retail price of heroin there, were -0.75 , and a doubling in the price of heroin exported from Afghanistan led to a ten-percent increase in retail prices, then the elasticity of demand for exported heroin would be on the order of -0.075 : an order of magnitude smaller, in absolute value. As a result, demand for Afghan opiate exports is, almost certainly, relatively inelastic. Even if retail elasticity were somewhat more than unit elastic, by

the time that demand is reflected up to the Afghan export level the demand at the export level would almost certainly be relatively inelastic.

Since the farm gate price of opium constitutes a much larger share of the Afghan retail price of heroin, and even more of the retail price of opium, than it does of the European retail price, Afghan consumption will respond much more to changes in opium prices than will consumption in Europe, with the rest of Asia somewhere between the two. This conclusion seems consistent with existing data on the temporary price increases resulting from the 2001 Taliban opium ban.⁵²

So, inasmuch as Afghanistan is almost a monopoly supplier of opiates to Europe and much of Asia, at least in the medium term, enforcement that limits Afghan supply will increase revenues to the Afghan opiates sector.⁵³

How drug suppliers divide up market share

Drug markets adapt. When enforcement eliminates a dealer or dealing tactic, or shrinks the volume that dealer or tactic can handle, the market expands somewhere else—a “balloon effect.” Some advocate “market jiu-jitsu,” pushing down hardest on the most noxious elements, knowing that the suppressed trafficking will be displaced, rather than eliminated. If trafficking is displaced to less noxious forms, the total damage may be reduced even if the volumes change little.⁵⁴

This idea could work in Afghanistan by, for example, trying to push trafficking and associated revenues away from the Taliban to other, less ideological militias. Likewise, actions in Afghanistan might affect whether heroin destined for western Europe flows north through Central Asia and Russia, south through Pakistan, or southwest through Iran and Turkey.⁵⁵ However, the enforcement-risk differentials needed to induce such a reallocation

of market share may be greater for large-scale traffickers in Afghanistan than for retail sellers in the United States and Europe.

The prevailing “risks and prices” theory says that drug markets *are markets*, with factors of production entering and exiting in response to price signals to equate returns available from other employment.^{56, 57} This model improves on non-market models, but it is an idealization, particularly at market levels where the market is embedded within, and its operations modified by, social networks. Thus “risks and prices” is a better model of retail markets and of poppy cultivation than of high-level distribution, for (at least) three reasons. First, insolvency does not weed out inefficient drug distributors, because essentially all dealers enjoy positive accounting profits, even if some have negative economic profits.⁵⁸ Second, information flows are highly imperfect in social-network-based markets, so the law of one price breaks down; arbitrage can bid away only gross price discrepancies. Substantial (± 30 percent) price dispersion can persist indefinitely in drug markets.⁵⁹ Third, actual humans do not respond to risk differentials precisely as conventional economic reasoning dictates.⁶⁰

Moreover, the proper model of risk of arrest from trafficking is not a simple “coin-tossing” process, where each dealing cycle has a fixed probability of an arrest. Instead, it is more like a two-stage process. Imagine that the first time a trafficker attempts a particular modus operandi, he tosses a (weighted) coin: heads means the technique is basically sound and tails means it is isn’t; so tails means the game is over before it starts. A trafficker who gets a heads on that first toss then tosses a second, different coin once for each shipment or transaction: heads means things went normally and the deal succeeded, while tails means, through the vagaries of crime, the trafficker got caught. Since the probability of

tails with the second coin is much lower than with the first coin, once traffickers stumble upon a viable m.o. they tend to stick with it.

Market share, therefore, does not reallocate quickly in response to modest differences in enforcement pressure or profitability among high-level traffickers. If the economic benefit of legal crops exceeds that of poppies, farmers react quickly (the next growing season), just as retail sellers respond quickly to an enforcement crackdown. However, this same logic may not apply to higher-level trafficking. It takes a large profit differential (and, by implication, a large differential in enforcement pressure) to induce a high-level trafficker to experiment with a new technique (e.g., route or supplier) because, even if the probability of tails on the second coin increases or the profits per completed transaction on heads falls, it would be even riskier to toss the first coin for a new technique. Since an established trafficker faces lower costs than a new trafficker or one entering a new market—with that dangerous first-toss risk—the incumbent is likely to be earning some pure profit, and so can absorb a cost increase while remaining profitable.

For example, traffickers in the Afghanistan-to-Europe distribution pipelines will be reluctant to begin flying to Bangkok and looking for Burmese heroin, even if they must start paying 20 or 35 percent more for Afghan heroin. They would rather stick with their m.o. and pass along the higher costs, leading to (slightly) lower consumption, and be content with a slightly diminished market, or, alternatively, absorb the costs, accepting some reduction in profit.

Likewise, suppose targeted enforcement increased costs on the Afghanistan-Iran-Turkey-Europe pipeline, effectively doubling that export price from \$2500 per kg to \$5000, but did not increase costs on the Afghanistan-Tajikistan-Russia-Europe pipeline. Pure risks-and-prices analysis would predict a shift in market share to the Russian route, until

limited factors of production raised the marginal cost on that route to equilibrate the total cost on the two pipelines converging on the same European market, where a law of one price held. Realistically, however, distributors along the southern pipeline, where the price rose from \$2500 per kg to the European wholesale price (perhaps \$50k), would just live with a reduction in their aggregate mark-ups from \$47.5k per kg to \$45k.

Thus there is enough slack in operating margins for distribution chains to absorb even large percentage changes in the different routes' export prices. Similar but less extreme versions of this principle apply within Afghanistan; shifting who owns (and profits from) the bazaar-to-export links in the distribution chain requires that the enforcement-risk differential create more than an incremental change—large enough to shake people out of their known and trusted m.o.

This market inertia makes the “push-down, pop-up” model of displacing trafficking more difficult to implement with large-volume traffickers in Afghanistan. Or, it may work only if the enforcement activity is so intense as to actually dismantle the target organizations rather than merely seizing easily replaced product and arresting easily replaced employees. Reconstituting a shattered organization is a much greater challenge.

How enforcement at one market level affects upstream and downstream levels

The drug-distribution business is not entirely vertically integrated. Within Afghanistan, there are at least four levels, characterized by sales from one level to the next rather than employer-employee relationships: (1) farmers, (2) opium-bazaar merchants, (3) aggregators and refiners, and (4) smugglers.

Opiates seizures in Afghanistan have different effects on insurgent profits depending on whether those profits come primarily from upstream (farmers and bazaars) or down-

stream (smugglers). Inasmuch as the goal is to affect insurgents' profits and power, it is useful to hit upstream (between the insurgents' level of operations and the farm gate), and counterproductive to hit downstream (between the insurgents and consumers). For example, if insurgents made most of their profits from smuggling drugs, then seizures within Afghanistan would reduce those profits, whereas seizures outside—including in final-market countries—would increase them. However, if (as seems less likely⁶¹) insurgents' profits came primarily from taxing farmers, then heroin seizures anywhere would increase insurgents' revenues, but other forms of enforcement (e.g., seizing traffickers' money) would reduce those revenues.

The details depend on the elasticities of demand and supply at different points, but downstream seizures behave almost like an increase in demand by users: they enrich upstream suppliers. Downstream non-seizure enforcement is a modest win; it increases the retail price, which slightly reduces demand, which slightly reduces upstream demand and profits.⁶² Enforcement upstream, both seizures and other cost-generating actions, has a modest adverse effect on downstream suppliers, by increasing their costs. Thus, if the sole consideration were reducing insurgents' profits from drug trafficking, enforcement downstream of the Taliban should avoid seizing drugs.

Effects on drug consumption, dependency, and harms to drug users

Easing up on crop eradication and other types of enforcement, or reducing rural-development efforts, may risk an increase in drug supply that lowers prices and thereby exacerbates problems of drug abuse. The effects will vary geographically. Richer countries and those farther from Afghanistan will feel the least impact: the United States hardly at all, western Europe slightly more, eastern Europe somewhat more, Afghanistan's neighbors

perhaps significantly, and Afghanistan itself most of all. This section explains why there are such sharp differences.

Impact on the United States

For three reasons, we expect counternarcotics interventions in Afghanistan to have essentially no effect on drug use in the United States.

First, heroin used in the United States primarily comes from the Western Hemisphere (notably Mexico and Colombia⁶³), and Afghanistan has not been well positioned to compete in the U.S. market.

Second, inventories of Afghan opiates are sufficient to keep markets supplied during any production interruption. Global opium demand has never exceeded 5,000 tons per year, yet illicit stockpiles may be approaching 10,000 tons.⁶⁴ So reductions in production might only slow the rate of accumulation of excess inventory, and even near-total eliminations of production that lasted only a year or two might not have appreciable effects on consumers. Indeed, to some extent that is what was observed during the 2001 Taliban poppy ban, at least in Europe.⁶⁵

Third, users in developed countries with high retail prices account for a small share of global consumption, and they are likely to be the least affected by changes in production volumes. Afghanistan is the primary supplier of heroin to Europe, but fewer than ten percent of Eastern Hemisphere opiate users are in Europe (excluding Russia).⁶⁶ So Asian markets serve as shock absorbers for the European markets.

Hence counternarcotics operations in Afghanistan have no realistic prospect of ameliorating drug problems in the United States, and reducing such efforts has little risk of

exacerbating the U.S. heroin problem. Counternarcotics efforts in Afghanistan should not be thought of as drug-control programs, from the perspective of controlling U.S. drug use.

The isolation of the U.S. market from Afghan heroin is not inevitable; in the not-so-distant past a substantial share of U.S. heroin supplies came from Southwest or Southeast Asian sources.⁶⁷ Even today, Asian sources supply an important share of the Canadian market and, thereby, at least partly supply some northern U.S. cities.

There are two conceivable mechanisms by which Afghanistan could contribute to the U.S. drug-abuse problem. First, the Afghan heroin price is roughly one percent of the U.S. price. Americans operating in a country where heroin prices are so extraordinarily low face an increased risk of using and becoming dependent, even more so if they are placed under enormous psychological stress.

Second, Americans or their allies in Afghanistan (either in uniform or as contractors) could become involved in trafficking back to the United States.

Cheap heroin has been readily available far from U.S. shores for decades and will remain so. U.S. consumers have been protected from a flood of cheap heroin not by shortages in global production but by the absence of direct smuggling routes from source countries.⁶⁸ So long as Americans and U.S. organizations operate in Afghanistan there will be logistical connections between cheap Afghan heroin and U.S. markets. An entire year's worth of U.S. heroin consumption would fit in a single shipping container.

These problems are, for now, speculative, but the Vietnam experience shows that they are not unthinkable—indeed, British troops currently are being investigated for drug smuggling.⁶⁹ However, the risks both of habituation of U.S. personnel and of the developing of smuggling routes are not likely to be substantially mediated by price; halving, or dou-

bling, the price of heroin in Afghanistan would have little effect on the revenue potential from successful smuggling, and the price is already too low to constitute much of a barrier to user-level experimentation.

Impact on Europe and Asia

Reductions, or increases, in Afghan opiates production will also have minimal immediate effects on heroin use in the Eastern Hemisphere, because of excess production and inventories, but sustained reductions would have greater effects.

Asian countries consume the majority of Afghan opiates, notably Iran, India, China, and Pakistan, with Afghanistan itself perhaps rising into those ranks. (Both Asian and European areas of Russia are also substantial consumers.) Hence unless reductions in production or exports were extremely severe, there would still be enough heroin to supply relatively high-priced Western European markets.⁷⁰

Data are weak, but reductions in Afghan exports should most affect consumption in the lowest-price markets, which tend to be closest to Afghanistan. Eastern Europe (including European Russia) has intermediate prices and so may be in an intermediate situation. Hence to the extent that counternarcotics operations reduce Afghan exports, Iran and Pakistan would benefit most. Conversely, they are at the greatest risk should reduced efforts in Afghanistan lead to increased production and decreased prices; indeed, Russia and Iran have complained vociferously about the suspension of poppy eradication.⁷¹

Impact on Afghanistan

On the order of 0.5–1.5 million Afghans are dependent on heroin or opium.⁷² The mid-range figure of one million is triple, in per capita terms, the rate of addiction to all “hard” drugs (i.e., other than cannabis) combined in the United States.

Tightening supply via stricter enforcement would be expected to drive up prices and reduce use in Afghanistan, while loosening up would have the opposite effects. However, for three reasons, any impact on Afghan consumption may be hard to detect.

First, even in relatively wealthy countries with efficient government institutions it is hard for drug-enforcement programs to substantially reduce drug use.

Second, drug use often follows an epidemic cycle,⁷³ and Afghan use appears to be in the rapid-escalation stage. In many countries, expansion during that stage has overwhelmed control efforts. Hence even determined efforts in Afghanistan over the next few years might only reduce the rate of increase in addiction, rather than reduce its magnitude.

Third, inasmuch as Afghanistan has not much more than five percent of the world's opiate users, and inventories held there could be one or two years of global consumption, it is hard to imagine an across-the-board tightening of supply in Afghanistan unless it became riskier for traffickers to hold that inventory in Afghanistan than further down the international distribution network.

Hence it seems plausible that the greater contributor to market availability and price experienced by Afghan users is the strength or weakness of local enforcement operations, and simply whether the users are or are not in regions where drug traffickers operate with relative impunity. It is easier to imagine eliminating production in one Afghan province having an effect on availability in that province than to imagine reductions in total Afghan production affecting availability throughout Afghanistan.

Demand and harm reduction

Demand reduction in importing nations

Anything that reduces demand for opiates in the Eastern Hemisphere reduces the profitability of growing poppies and making heroin, in Afghanistan or anywhere else in Asia. So consumer countries currently complaining about the suspension of eradication efforts in Afghanistan can reasonably be asked if they are doing all they can do to reduce heroin consumption within their borders. In most, the answer is clearly “no,” even within existing economic and organizational constraints.

Opiate addiction is the most treatable substance-abuse disorder because of the existence of substitute drugs with proven records of attracting patients and reducing (though often not eliminating) their illicit-market purchases.⁷⁴ Because substitutes are also psychoactive and habituating, they remain politically controversial, despite their clearly established efficacy in improving the health and social functioning of opiate abusers and reducing their rates of economic crime. In much of Western Europe and Iran, concern about HIV has overcome governmental resistance to substitution therapies, but Russia, despite major heroin and HIV problems, remains resistant. Nothing that happens in Afghanistan, for good or ill, would affect the Russian drug problem nearly as much as would the adoption of substitution therapies, and that step would also help Afghanistan, by shrinking the market for Afghan heroin.

Domestic drug-law enforcement can also help control heroin consumption, though typically at a high cost in enforcement resources and incarceration. Insofar as it is possible to increase not just the price of the drug, but also the difficulty users face in finding sellers,

domestic drug enforcement reduces import demand (although seizures tend to have the opposite effect).

The United States, where a large proportion of heroin users are in the criminal-justice system, has begun to experiment with frequent drug tests and quick sanctions in the form of short jail stays for continued drug use.⁷⁵ Whether such a system can reduce overall heroin demand in any given country depends both on the proportion of its users under criminal-justice supervision and on the capacity of the supervising agencies to carry out the testing-and-sanctions regime, which requires substantial interagency coordination.

So there are policy changes that would help. Still, since drug-control measures tend to change slowly and we are contemplating changes to be made by third countries, other than either the U.S. or Afghanistan, it would be imprudent to rely on controls in those importing countries to provide much relief to Afghan authorities struggling to control the export market.

Interventions with users in Afghanistan

Afghanistan itself could pursue demand-side approaches to limiting the impact of drug abuse. The prospects for major improvement are not bright, but there could be some beneficial effects and fewer risks of unintended adverse consequences than with supply-side interventions.

Demand-control interventions not only reduce drug use, they also tend to reduce prices. So if Afghans consume between five and ten percent of Afghan opiate production,⁷⁶ shrinking that demand would probably reduce revenues of the Afghan opium industry more than proportionally.

The cost of substitutes (higher than the cost of heroin in Afghanistan), added to the lack of infrastructure and likely cultural resistance might mean that large-scale opiate-substitution therapy may not be a practical option for Afghanistan. Although they are not nearly as effective, other drug-treatment modalities (colloquially, “talk therapies”) do not employ opiate substitutes. Conceivably, funding these treatments would offer a double benefit of improved services for current users and better job prospects for some who might otherwise be unemployed.

Even if funding treatment will not make a material difference to Afghan drug problems, there is a second, entirely distinct potential benefit. Inasmuch as counterinsurgency is ultimately a battle for public support, and since the Afghan people collectively suffer substantially from addiction, even the effort to provide drug treatment might earn good will. There are few treatment centers in Afghanistan, so it would be relatively cheap to achieve a large proportionate increase in treatment.⁷⁷ Obviously, the absolute number of treatment slots matters if the objective is substantially reducing the burden of addiction, but percentage changes can also score public-relations points. The United States’ funding the majority of treatment slots in Afghanistan might reflect both its national concern about drug abuse and its compassion for the poor and vulnerable in Afghanistan.

Besides trying to reduce drug use, there are also tactics for reducing the harm associated with a given amount of drug use. Afghanistan is at risk of substantial spread of HIV due to injection drug use. HIV-prevention campaigns have had more impact on HIV/AIDS in some developing countries than drug-control interventions typically have on drug use. The usual recommendation would be needle-and-syringe programs (NSP). This may well be the most effective public-health intervention, but given the conservative culture in Afghanistan, it is unclear whether promoting NSP would be acceptable to the Afghan public; it

could backfire and trigger paranoia that the United States is in effect promoting drug addiction among Afghans. It may also be difficult to explain within the United States.

However, HIV control ought to be on the agenda of any narcotics policy for Afghanistan, and it may be that organizations and countries that have been successful in implementing NSP themselves are more natural leaders of any such efforts in Afghanistan.

Conclusion

Afghanistan is the poster child for fears of “narcoterrorism.” Accounts of the links between drug trafficking and terroristic violence are often exaggerated, but in Afghanistan those links are direct, clear, and of considerable importance.

Hence it is natural to suppose that counternarcotics efforts in Afghanistan contribute to the security-and-governance effort through their effects on drug markets. However, the opposite is more nearly true. Their natural tendency is to increase revenues from opiates trafficking, to channel more of those revenues to the most vicious armed groups, and to increase corruption. This is no less true of high-level enforcement, improved border security, and rural development than it is of poppy-crop eradication.

Afghanistan will remain the dominant, low-cost supplier of illicit opium for the Eurasian market for at least the medium term. Retail demand for Afghan opium and its products is inelastic with respect to Afghan export prices. So there is no reason to expect that changes—up or down—in the level of counternarcotics effort in Afghanistan would have a major impact for good or ill on the level of heroin abuse in the countries that import Afghan heroin. The impact on the U.S. market will in any case be close to nil.

Therefore, counternarcotics efforts in Afghanistan mainly move production around geographically and socially, and change the distribution of revenues, rather than reducing production overall.

It is possible that achieving better security and governance in Afghanistan, or the allied goal of rural economic development, might in the long run reduce its production of opium and its exports of opiates; but policies aimed *directly* at reducing the size of the drug markets are unlikely to succeed either on their own terms or in terms of political and military objectives via their effects on drug markets.

Consequently, drug policies in Afghanistan should properly be chosen largely in consideration of their potential direct contributions—again for good or ill—to security, governance, and economic development. In general, this will call for a lighter footprint, on the theory that “Less is more.”

However, there is a case—not an airtight one—for keeping poppy-free regions poppy-free. In theory there is an even stronger case for focusing enforcement on those forms of trafficking and those organizations most tightly linked to insurgency, warlordism, and corruption, but substantial doubt about whether that strategy could be implemented in practice. Diversifying Afghan drug-enforcement agencies so as to reduce opportunities for corruption may be a good idea, and equally likely to meet with strong internal and external resistance.

The exception to the less-is-more principle is demand reduction. Such efforts may not have much impact on drug use, harm, or other objectives, but the sign of the impact is unambiguously favorable. Importers of heroin made from Afghan opium can help Afghani-

stan by getting their consumers to consume less: retail enforcement, treatment, and mandated abstinence all have potential.

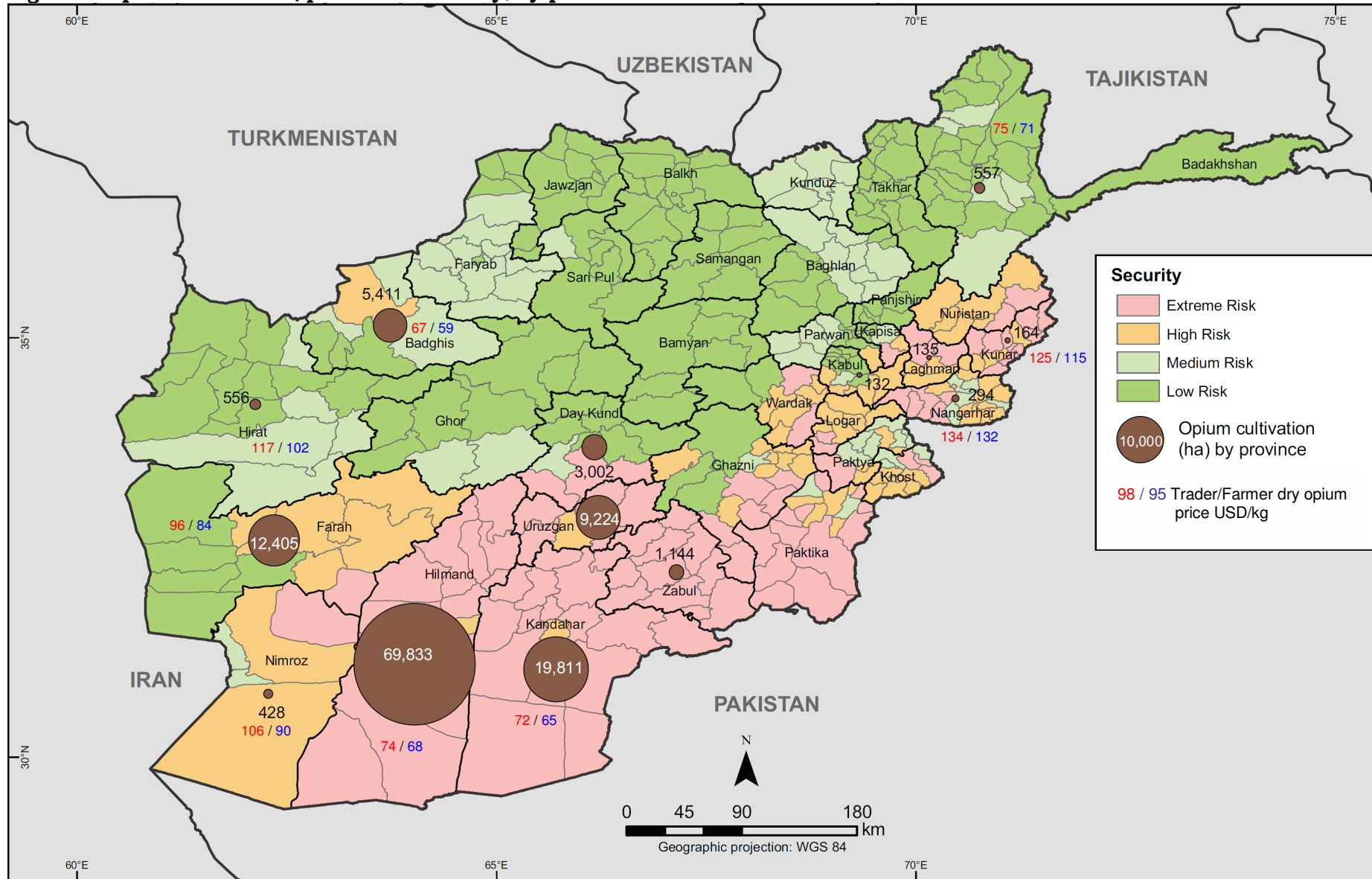
Harm-control efforts seem to have very little impact on consumption, one way or the other. So it does not matter to Afghanistan what Russia does about HIV among its heroin users. But efforts to reduce the misery caused by opiates addiction in Afghanistan could reflect well on the Afghan government and its partners.

Table 1. Typical price of 1kg of heroin through the distribution system⁷⁸

Stage	Price	Location
Farm gate ¹	\$900	Afghanistan
Processor	\$2500	Afghanistan
Export	\$4,700	Afghanistan's neighbors
Import/ Wholesale (kg qty.)	\$17,000	Turkey
Mid-level/ Wholesale (oz qty.)	\$66,000	England/Wales
Retail (mg qty.)	\$239,000	UK

1. Based on the amount of opium required to make 1 kg of heroin.

Figure 1. Opium cultivation/prices and security, by province⁷⁹

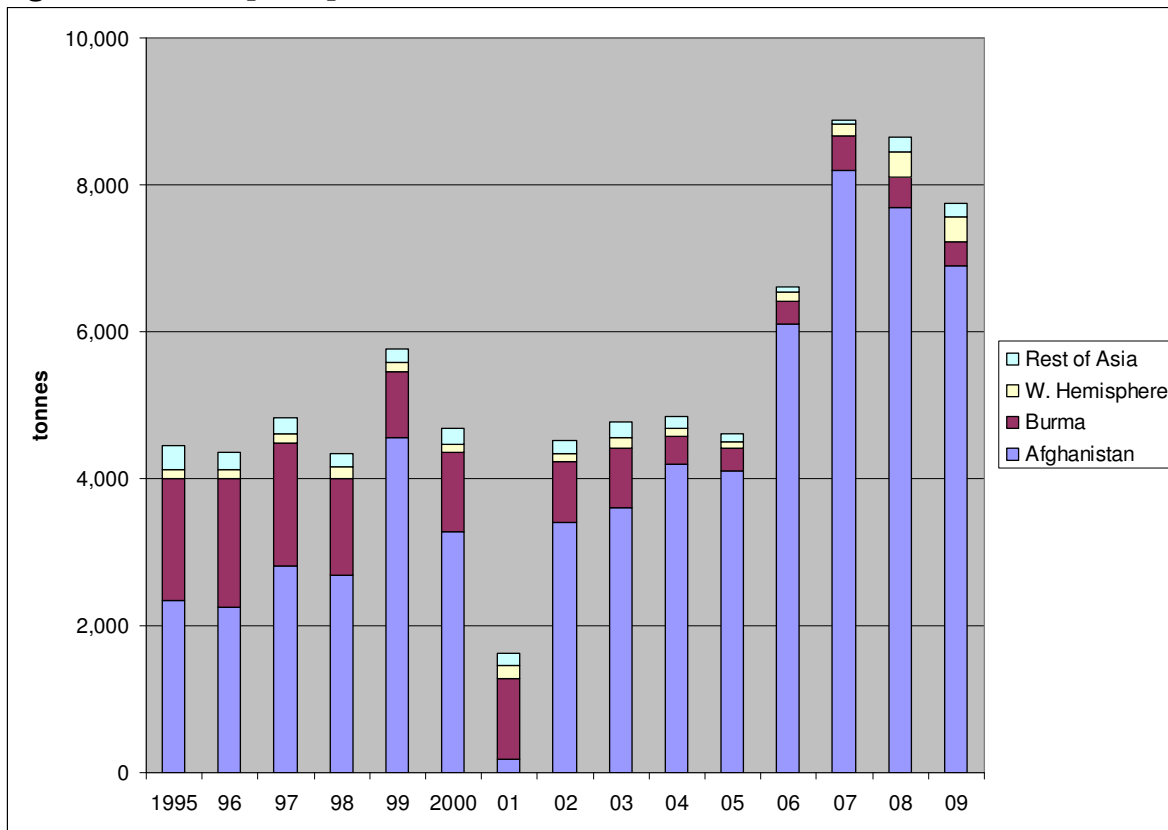


Source: Security—UN Department of Safety and Security (as of July 16, 2009)

Source: Cultivation—Government of Afghanistan, national monitoring system implemented by UNODC, 2009

Source: Prices—UNODC, December 2009

Figure 2. Global opium production, 1995–2009⁸⁰



Source: UNODC, *World Drug Report 2010*.

¹ Statements that production has increased 40-fold since U.S.-led military occupation began are grossly misleading. Production in 2001 was abnormally low, and trafficking in that year was largely buffered by inventories. Current cultivation is approximately double the average for years before the invasion.

² United Nations Office on Drugs and Crime (UNODC), *World Drug Report 2010* (Vienna: UNODC, 2010), p. 20.

³ In Afghanistan, terms such as “insurgent” and “warlord” are of limited utility. We think of “insurgents” as armed political actors more hostile to, and less persuadable by, the central government and ISAF, and “warlords” as less hostile and more persuadable armed political actors.

⁴ “Opiates” here refers to opium, morphine, and heroin. Counternarcotics efforts in Afghanistan almost entirely concern opiates, although Afghanistan is also a large producer of cannabis. UNODC, *Afghanistan Cannabis Survey 2009* (Vienna: UNODC, 2010).

⁵ Several recent books vividly portray the opiates industry in Afghanistan. Joel Hafvenstein, *Opium Season: A Year on the Afghan Frontier* (Guilford, Conn.: Lyons, 2007); David MacDonald, *Drugs in Afghanistan: Opium, Outlaws and Scorpion Tales* (London: Pluto, 2007); and Gregor Salmon, *Poppy: Life, Death and Addiction Inside Afghanistan’s Opium Trade* (Sydney: Random House, 2009). On the relation between the narcotics trade and insurgents and terrorists, see Vanda Felbab-Brown, *Shooting Up: Counterinsurgency and the War on Drugs* (Washington: Brookings Institution, 2009); and Gretchen Peters, *Seeds of Terror: How Heroin Is*

Bankrolling the Taliban and al Qaeda (New York: Thomas Dunne, 2009). For a study of the global heroin trade, see Letizia Paoli, Peter Reuter, and Victoria Greenfield, *The World Heroin Market: Can Supply Be Cut?* (New York: Oxford University Press, 2009).

⁶ Recent estimates have downgraded opiates trafficking as a source of revenue for the primary insurgent groups, but remain in the hundreds of millions of dollars. Those revisions have not altered judgments about total criminal revenues, just the share that goes to insurgents. While eliminating the opiates trade would not cripple the insurgents, it would weaken their revenue base and also improve security and governance by freeing up resources now used to combat it and by reducing opportunities for corruption.

⁷ U.S. Senate, *Afghanistan's Narco War: Breaking the Link Between Drug Traffickers and Insurgents*, 111th Cong., 1st sess., 2009.

⁸ Stephen Kaufman, "U.S. Scraps Afghan Crop Eradication in Favor of Interdiction," *America.gov*, July 29, 2009, america.gov/st/scenglish/2009/July/20090729184555esnamfuak0.4385187.html. For the argument against eradication, see Barnett R. Rubin and Jake Sherman, *Counter-Narcotics to Stabilize Afghanistan: The False Promise of Crop Eradication* (New York: Center on International Cooperation, 2008). More recently, a U.S. Senate panel has called for a return to eradication. U.S. Senate, *U.S. Counternarcotics Strategy in Afghanistan A Report to the Senate Caucus on International Narcotics Control*, 111th Cong. 2nd sess., 2010. The most recent strategy is elaborated in U.S. Department of State, *Report on U.S. Counternarcotics Strategy for Afghanistan* (Washington: U.S. Department of State, 2010). For an evaluation of the strategy, see General Accounting Office (GAO), *Afghanistan Drug Control: Strategy Evolving and Progress Reported, but Interim Performance Targets and Evaluation of Justice Reform Efforts Needed* (Washington: GAO, 2010). For a critique of the strategy, see Vanda Felbab-Brown, testimony before the U.S. Senate Caucus on International Narcotics Control, October 21, 2009, drugcaucus.senate.gov/vanda-felbab-brown-10-21-09.pdf.

⁹ This conclusion depends on the particular dynamics of the Afghanistan opiates market. In some circumstances, a marginal reduction in poppy cultivation will yield a reduction in available revenues, and in others an increase; it appears that the latter circumstances obtain in Afghanistan, and that moving to the former is unlikely.

¹⁰ UNODC projected that a poppy blight would reduce 2010 opium production by about 2500 tons, or one-third of the previous year's output. Richard A. Opiel, Jr., "Mysterious Blight Destroys Afghan Poppy Harvest," **New York Times**, May 12, 2010, p. 1.

¹¹ David Mansfield argues that both terms are problematic, as they put the focus on reduced poppy cultivation, rather than on economic development—which should reduce poppy cultivation as a consequence. See, e.g., David Mansfield and Adam Pain, *Alternative Livelihoods: Substance or Slogan?* (Kabul: Afghanistan Research and Evaluation Unit (AREU), 2005). However, we use them because they are common and recognized terms.

¹² Even countries better governed than Afghanistan that have reduced drug-crop cultivation, such as Thailand and Pakistan, have not necessarily improved their drug-trafficking problems, as they have moved up the value chain to become transit points for refined opiates. Moreover, it was precisely the increase in Afghan opium production that enabled shrinking production in those countries.

¹³ See Jonathan P. Caulkins and Peter Reuter, “What Can We Learn From Drug Prices?” *Journal of Drug Issues*, Vol: 28, No. 3 (Fall 1998), pp. 593–612; and Michael Grossman, “Individual Behaviours and Substance Use: The Role of Price,” in Michael Grossman and Björn Lindgren, eds., *Substance Use: Individual Behaviour, Social Interactions, Markets and Politics* (Amsterdam: Elsevier, 2005).

¹⁴ Tom Coghlan and Jerome Starkey, “Corruption Is Just the Way Things Are Done in Afghanistan,” *The Times*, November 4, 2009, timesonline.co.uk/tol/news/world/Afghanistan/article6901780.ece.

¹⁵ David Mansfield, *Sustaining the Decline?: Understanding the Changes in Opium Poppy Cultivation in the 2008/09 Growing Season* (London: Afghan Drugs Interdepartmental Unit, 2008).

¹⁶ Farmers may also voluntarily grow less poppy than their resources allow, in order to limit their risks through crop diversification. As with actors in other markets, Afghan farmers are not simple profit maximizers.

¹⁷ Farmers needing money sometimes sell their future production prior to harvest, at considerably less than the harvest-time price.

¹⁸ UNODC, *Afghanistan Opium Price Monitoring: Monthly Report* (UNODC: Kabul, June 2010).

¹⁹ Opium growing also helps farmers whose primary livelihood is from other crops by providing diversification; it remains attractive even if the expected return is below that of some competitor. In addition, poppies, an annual crop, have major advantages over tree fruit in high-insecurity environments. David Mansfield, *Responding to Risk and Uncertainty: Understanding the Nature of Change in the Rural Livelihoods of Opium Poppy Growing Households in the 2007/08 Growing Season* (London: Afghan Drugs Interdepartmental Unit, 2008), p. iv.

²⁰ Religious authorities and popular attitudes differ on whether poppy cultivation is prohibited, but it is not regarded as utterly benign.

²¹ A pound of wheat costs less than five percent of the retail price of a 16-oz. box of shredded-wheat cereal. The farm gate price of opium accounts for about 35 percent of the price of heroin in Afghanistan. Of course, that same kg of heroin sells for a much higher price in Europe. Thus heroin in Europe is primarily the product of criminal labor, and secondarily a farm product.

²² These figures are approximate, and vary with the quality of opium and processing. Our qualitative results do not change within the ranges encountered in Afghanistan.

²³ UNODC’s estimates are the most widely cited, but are subject to a host of methodological and political constraints. Other estimates are at considerable variance; official U.S. estimates were lower than UNODC’s by about 2000 tonnes in 2008, and about 1600 tonnes in 2009. Our qualitative results do not change within the range of production estimates.

²⁴ UNODC, *World Drug Report*, p. 138.

²⁵ This \$900 million is spread over about 250,000 households, leaving revenue per household of \$3600, but some of that goes to hired laborers.

²⁶ U.S. Senate, *Narco War*.

²⁷ UNODC, *Afghanistan Opium Survey 2009* (Vienna: UNODC, 2009)

²⁸ *Ibid.*, p. 7 suggests 40 percent through Iran, 30 percent through Pakistan, and 30 percent through Central Asia.

²⁹ It is not entirely clear whether the “taxes” insurgents impose on the opiates trade are ad valorem (based on the product’s value) or excise (based on the product’s weight). Some reporting on taxation cites “dollars per kilogram,” but such rates may reflect ad valorem taxation at fixed values of product price. Taxes collected in kind are inherently ad valorem, and this seems to be the common practice. See, for example, Gretchen Peters, *How Opium Profits the Taliban* (Washington: United States Institute of Peace, 2009).

³⁰ The logic is parallel for cocaine and heroin and has perhaps been better articulated in the cocaine literature. See Kevin J. Riley, *Snow Job: The War Against International Cocaine Trafficking* (Santa Monica: RAND, 1996).

³¹ Paoli, Reuter, and Greenfield, *Heroin*, p. 78.

³² This is an example of “path dependence.” It is much easier for a country with no drug production to continue to have no production than it is for a country that has drug production to eradicate it.

³³ The short-run demand for most farm products is inelastic. This effect is the basis for price-support programs for American farmers, which require them to take land out of production in order to increase revenues.

³⁴ Francisco E. Thoumi, *Illegal Drugs, Economy, and Society in the Andes* (Washington: Woodrow Wilson Center, 2003).

³⁵ Richard Snyder, “Does Lootable Wealth Breed Disorder? A Political Economy of Extraction Framework,” **Comparative Political Studies**, Vol. 39, No. 8 (October 2006), pp. 943–969.

³⁶ Peter Reuter, “Do No Harm: Sensible Goals for International Drug Policy,” **The American Interest**, March–April 2009, pp. 46–52.

³⁷ On the benefits of anticorruption efforts more generally, see World Bank, “Fighting Corruption in Afghanistan,” note prepared for ARTF donors meeting, 2008.

³⁸ Yaroslav Trofimov and Habib Zahori, “Police Official Goes on Trial in Kabul for Aiding Drug Trade,” **Wall Street Journal**, August 1, 2010, online.wsj.com/article/SB10001424052748704905004575405340979599502.html.

³⁹ Snyder, “Lootable Wealth.”

⁴⁰ In any event, Afghan drug courts are criticized less for openness to corruption by traffickers than for reflexively issuing guilty verdicts. See Jerome Starkey, “Lawyers Boycott ‘Sham’ Drugs Court,” **The Scotsman**, January 28, 2010, scotsman.com/world/Lawyers-boycott-39sham39--drugs.6020737.jp.

⁴¹ Thomas Babor, et al., *Drug Policy and the Public Good* (New York: Oxford University Press, 2009), Ch. 10.

⁴² For example, the government ban and low prices were the most common reasons cited for not growing, and high prices was the most common reason cited for growing. UNODC, *Opium Survey*, p. 36.

⁴³ Vanda Felbab-Brown, *Narco-Belligerents Across the Globe: Lessons from Colombia for Afghanistan?* (Madrid: Real Instituto Elcano, 2009).

⁴⁴ U.S. “alternative development” spending is distributed across several different agencies and many line items in the federal budget (some explicit, some not), so the total is difficult to pin down. As a lower bound, the FY2011 budget request has \$185M in the Economic Support Fund account for alternative development in Afghanistan; total FY2010 spending for “agriculture and alternative development” is \$470M with \$350M requested in supplemental funding. Office of National Drug Control Policy (ONDCP), *National Drug Control Strategy 2010: FY 2011 Budget Summary* (Washington: ONDCP, 2010); and no author, “Former Dover Man Aiding Farmers in Middle East,” **Times-Reporter** (Dover, Ohio), May 1, 2010, timesreporter.com/communities/x359583459/Former-Dover-man-aiding-farmers-in-Middle-East.

⁴⁵ For instance, half the electricity produced by a USAID-funded \$100 million upgrade to the Kajaki hydropower plant is effectively sold by the Taliban. Yaroslav Trofimov, “U.S. Rebuilds Power Plant, Taliban Reap a Windfall,” **Wall Street Journal**, July 13, 2010, online.wsj.com/article/SB10001424052748704545004575352994242747012.html.

⁴⁶ Grossman, “Individual Behaviours” offers a useful literature review. Studies that estimate retail heroin-demand elasticity include Anne Line Bretteville-Jensen and Erik Biørn, “Heroin Consumption, Prices and Addiction: Evidence from Self-Reported Panel Data,” **Scandinavian Journal of Economics**, Vol. 105, No. 4 (December 2003), pp. 661–679; and Dhaval Dave, “The Effects of Cocaine and Heroin Price on Drug-Related Emergency Department Visits,” **Journal of Health Economics**, Vol. 25, No. 2 (March 2006), pp. 311–333.

⁴⁷ We assume that costs imposed by enforcement, at every level, are passed along the distribution chain via price increases.

⁴⁸ For example, if three markets had respective demand elasticities of -0.8 , -0.7 , and -0.6 and respective market shares of 30 percent, 50 percent, and 20 percent, then the overall demand elasticity would be $(-0.8) \times 0.3 + (-0.7) \times 0.5 + (-0.6) \times 0.2 = -0.71$.

⁴⁹ UNODC, *Opium Survey*.

⁵⁰ Jonathan P. Caulkins and Haijing Hao, “Modeling Drug Market Supply Reductions: Where Do All the Drugs Not Go?” **Journal of Policy Modeling**, Vol. 30, No. 2 (March-April 2008), pp. 251–270.

⁵¹ The full analysis has to adjust for seizures and changes in the price relationship across levels, but those factors are minor compared to the one outlined here. See Caulkins and Hao, “Modeling” for details.

⁵² Paoli, Reuter, and Greenfield, *Heroin*.

⁵³ In theory, increased enforcement pressure might allow other regions (e.g., Burma) to expand production and capture market share, eventually lowering drug revenues in Afghanistan. This is unlikely to happen in the next few years. Nor are there practicable policies that would greatly increase the likelihood of such shifts, even if it seemed desirable to do so.

⁵⁴ See Jonathan P. Caulkins and Peter Reuter, “Toward a Harm Reduction Approach to Enforcement,” **Safer Communities**, Vol. 8, No. 1 (January 2009), pp. 9–23.

⁵⁵ See UNODC, *World Drug Report*, p. 49.

-
- ⁵⁶ Peter Reuter and Mark A.R. Kleiman, “Risks and Prices: An Economic Analysis of Drug Enforcement,” in Norval Morris and Michael Tonry, eds., *Crime and Justice: An Annual Review of Research*, Vol. 7 (Chicago: University of Chicago Press, 1986), pp. 289–340.
- ⁵⁷ Jonathan P. Caulkins and Robert J. MacCoun, *Limited Rationality and the Limits of Supply Reduction*, (Berkeley: University of California, 2003).
- ⁵⁸ David Boyum, “Reflections on Economic Theory and Drug Enforcement,” (PH.D. Dissertation, Harvard University, 1992). Very few drug dealers earn more than the minimum wage, so their economic profits are negative. Steven D. Levitt and Sudhir A. Venkatesh, “An Economic Analysis of a Drug-Selling Gang’s Finances,” **Quarterly Journal of Economics**, Vol. 115, No. 3 (August 2000), pp. 755–789.
- ⁵⁹ Peter Reuter and Jonathan P. Caulkins, “Illegal Lemons: Price Dispersion in Cocaine and Heroin Markets,” **Bulletin on Narcotics**, Vol. LVI, No. 1-2 (2004), pp. 141–165.
- ⁶⁰ Caulkins and MacCoun, *Limited Rationality*.
- ⁶¹ “The biggest source of drug money for the Taliban is the regular payments made by large drug trafficking organizations to the Quetta shura, the governing body of the Taliban whose leaders live in Quetta, the Pakistani border city.” U.S. Senate, *Narco War*, p. 9).
- ⁶² Donald Putnam Henry, “The Effects of Interdiction on Drug Exports. Appendix A,” in Peter Reuter, Gordon Crawford, and Jonathan Cave, eds., *Sealing the Borders: The Effect of Increased Military Participation in Drug Interdiction* (Santa Monica: RAND, 1988).
- ⁶³ When heroin seized in the United States is analyzed, samples reflecting an Asian chemical signature account for only about ten percent of the market. This conventional analysis has not gone entirely unchallenged, as estimated U.S. consumption (22 tons) greatly exceeds estimated Latin American production (perhaps ten tons). However, given the frailty of both consumption and production estimates, we remain persuaded by the fact that heroin seized in the United States rarely displays Asian chemical signatures.
- ⁶⁴ UNODC, *Opium Survey*, p. 7.
- ⁶⁵ Paoli, Reuter, and Greenfield, *Heroin*.
- ⁶⁶ UNODC, *World Drug Report*, p. 153.
- ⁶⁷ Heroin Signature Program data suggest Southwest Asian heroin accounted for an important share of the U.S. market from 1979 to 1987, when it approached half the market. Michael Childress, *A Systems Description of the Heroin Trade* (Santa Monica: RAND, 1994).
- ⁶⁸ UNODC, *World Drug Report*, p. 43.

⁶⁹ Kate Mansey, “British Troops Probed on Drug Traffic,” **Mirror**, September 5, 2010, mirror.co.uk/news/top-stories/2010/09/05/british-troops-probed-on-drug-traffic-115875-22538569.

⁷⁰ Increasing the upstream price yields a much larger increase in the effective retail price in countries such as Iran and even Russia than it does in western Europe. When supplies are tight suppliers will allocate scarce supplies preferentially to those able to pay the most.

⁷¹ Simon Shuster, “Is NATO to Blame for Russia’s Afghan Heroin Problem?” **Time**, June 12, 2010, time.com/time/world/article/0,8599,1996120,00.html; and “Iran Blames US, Britain for Increased Drug Production in Afghanistan,” Fars News Agency, September 6, 2010, english.farsnews.net/newstext.php?nn=8906151437.

⁷² Reported estimates are somewhat incommensurate; they include: 1.5M opiate addicts (Afghanistan Ministry of Narcotics, 2009); 900k opiate users (Gen. McCaffrey, 2008); 1M addicts (UNODC, 2009); at least 2M addicts (CBS News, 2009); and 150k opium users and 50k heroin addicts (UNODC, 2007).

⁷³ Jonathan P. Caulkins, “Models Pertaining to How Drug Policy Should Vary Over the Course of an Epidemic Cycle,” in Bjorn Lindgren and Michael Grossman, eds., *Substance Use: Individual Behavior, Social Interactions, Markets, and Politics*, Advances in Health Economics and Health Services Research, Vol. 16 (Amsterdam: Elsevier, 2005), pp. 407–439.

⁷⁴ Laura Amato, et al., “An Overview of Systematic Reviews of the Effectiveness of Opiate Maintenance Therapies: Available Evidence to Inform Clinical Practice and Research,” **Journal of Substance Abuse Treatment**, Vol. 28, No. 4 (June 2005) pp. 321–330.

⁷⁵ Angela Hawken and Mark Kleiman, “Managing Drug Involved Probationers with Swift and Certain Sanctions: Evaluating Hawaii’s HOPE,” report submitted to the National Institute of Justice, 2009; and Mark A.R. Kleiman, *When Brute Force Fails* (Princeton: Princeton University Press, 2009), Ch. 3.

⁷⁶ If Afghanistan is home to one million of the Eastern Hemisphere’s roughly 15 million opiate addicts, this seems a plausible range of estimates. Afghan addicts are presumably much poorer than addicts elsewhere, but heroin is also much less expensive there. Rosie DiManno, “Afghanistan’s Hidden Heroin Addicts,” **Toronto Star**, August 29, 2009. It is not clear which factor dominates and, hence, whether consumption per addict is higher or lower in Afghanistan than in the world generally.

⁷⁷ “In the worst-affected province, Balkh, in northern Afghanistan, there is just one treatment centre with 20 beds.” Matthew Bannister, “Global Addiction, Personal Affliction,” BBC World Service, November 23, 2009, bbc.co.uk/worldservice/programmes/2009/11/091123_outlook_heroin_addiction.shtml. It seems likely that funding a substantial proportionate expansion of the Afghan treatment system is possible given the magnitude of other spending in Afghanistan, but that treating any substantial fraction of one million opiate abusers is not.

⁷⁸ Data from Beau Kilmer and Peter Reuter, “Doped. How Two Plants Wreak Havoc on the Countries that Produce and Consume Them—and Everyone in Between,” **Foreign Policy**, November-December 2009, pp. 34–35. For detailed notes, see foreign-

policy.com/articles/2009/10/19/prime_numbers_doped?page=0,2. These figures are representative of circa 2007 data; while prices fluctuate, the trend depicted remains accurate in 2010.

⁷⁹ Map is adapted from UNODC, *Opium Survey*, with price data from UNODC, *Afghanistan Opium Winter Rapid Assessment 2010* (Vienna: UNODC, 2010); prices are shown for those provinces with both significant cultivation and survey data.

⁸⁰ The figure shows potential opium production, an estimate of how much opium could be produced based on estimates of hectares of poppy under cultivation and yield per hectare. See UNODC, *World Drug Report*, p. 138. As morphine content varies by year and region, this is an inexact proxy for potential heroin production. Nonetheless, within any set of parameters, Afghanistan remains the overwhelmingly dominant actual and potential source of heroin.