(Mis)understanding the intersection between development policies and data collection: Case Study, Afghanistan

1. Introduction

Development organisations are often ill at ease when engaging with the challenges of illicit drug production in the global south. Even in countries like Afghanistan, Colombia and Burma where the illicit drugs economy dominates large parts of the rural landscape and has a significant impact on both the political economy and macro-economic indicators, development donors have been reluctant to integrate an analysis of the causes and effects of illicit drug production into their programmes and country level assessments.

Their discomfort has multiple causes. For one, for those development donors tied to the 'Washington consensus' and its emphasis on 'market based solutions,' it is perhaps counterintuitive to intervene and actively seek to undermine one of the few value chains that appears to work in the kind of conflict affected environments that illegal drug crops are concentrated. Rather, donors like USAID and DFID look to work with markets, intervening in order to make them 'work for the poor.' They do not look to destroy a market entirely as is the intent of the current international control system and would no doubt question whether such an aim is achievable.

A second cause of discomfort has been the problem of identifying an appropriate development response to illicit drugs production, particularly given the benefits opium and coca cultivation have delivered to the rural households and communities that produce them. For example, in Afghanistan illegal opium is the largest export; it has created an estimated 400,000 direct jobs (Full Time Equivalent); boosted the legal economy, providing livelihoods for farmers and those providing agricultural inputs and consumer goods; and helped bring 265,000 hectares of former desert land under agriculture (SIGAR 2014, 82; Mansfield 2015). Policy makers and practitioners are hard pressed to offer examples of development assistance that has delivered such dramatic outcomes.

Yet, at the same time, in Afghanistan the illicit opium economy has led to growing levels of corruption; offered a revenue stream for private state actors and insurgent groups who seek to undermine the legitimacy of the central state; and 'crowded out' licit economic enterprise, a trend that is likely to increase in the wake of dwindling levels of aid. Furthermore, the concentration of opium poppy cultivation in the former desert areas of southern and south western Afghanistan has led to the intensification of agricultural production, including the use of harmful pesticides, increased salination, and ultimately leading to the collapse of rural livelihoods for the land-poor, and increasing rates of outmigration.

As a dual edged sword, generating both benefits and costs for producer countries, illicit drug production has typically left the development community unaware of how to best respond. While in the past there was some sympathy for the argument that a possible development response to illicit drug production in a country like Afghanistan was to legalise or regulate drug crop production, there is now a recognition that this option leads to its own development

challenges (Byrd and Mansfield 2014). Not least the fact that the comparative advantage of a major drug producing country like Afghanistan lies with illicit, not licit, drug crop production, and therefore many of the economic benefits that opium production has brought would be lost to more efficient producers in the global north, such as Australia, France and Spain. These countries have not only made the necessary advances in agricultural inputs and techniques but also have the large farms necessary for the economies of scale required to sell opiates competitively on the international market, along with the institutional capacity and security regimes required for effective regulation. In the absence of the option of shifting to legal or regulated production, for both practical and legal reasons, many development organisations have been left not knowing which way to turn.

Those advocating for drug control, such as organisations like UNODC, have offered a limited menu of responses for development donors, many of which run contrary to donor's current thinking and practice. For example, area based rural development programmes with the primary objective of reducing illicit drug crop production - so called 'Alternative Development' - have long been considered problematic by many development organisations (Kapila, Templar and Winter 1992:52). Limited in geographic scope and often perceived as little more than crop-substitution, alternative development finds little financial support from the main development donors within the OECD (UNODC 2015: 84). In Afghanistan, there has been the added challenge that this kind of area based programme tasked with delivering a wide range of services, including physical and social infrastructure within a contained geographic territory, has been out of line with a development architecture and funding that is more sectoral-based and tied to national programmes.

The change model that underpins alternative development is also far from clear with many development donors perceiving it intimately tied to coercive measures such as eradication and efforts to make development assistance contingent on reductions in drug crop cultivation, so called 'conditionality.' There are many examples of alternative development, particularly in Afghanistan, where the strategic focus of the programme has been to provide largesse and political favour to elites so that they will in turn coerce the rural population to abandon or reduce opium poppy cultivation. The kind of pro-poor development outcomes that donors like DFID or the World Bank might support are lost, or merely an externality of a programme primarily designed to leverage reductions in levels of opium poppy cultivation, much of which is only short lived.

In the absence of a change model aligned with current development theory and practice, the most common response of the development community has been to ignore the illicit economy altogether and to carry on with its conventional development programmes. In Afghanistan it has not been unusual to hear the argument that any support to legal on-farm, off-farm and non-farm income will lead to a contraction of the illegal economy, or at least provide an increased portfolio of legal options that farmers can pursue. In practice, both illicit drug crop cultivation and the legal economy can grow in parallel and it is not uncommon for investments in physical infrastructure such as irrigation, and agricultural inputs such as fertiliser used to increase the amount of land under opium poppy and its yields. Other interventions, some of

them ostensibly designed to deliver development outcomes, such as the increased production of staples or high value horticulture, have marginalised the land-poor, leading to changes in land tenure arrangements, the migration of vulnerable groups and the concentration of drug production in more remote and insecure regions.

In this situation, development donors have often argued that it is the responsibility of law enforcement to respond to the diversion of development investments into illicit drugs production, or the relocation of cultivation, and that these kind of unintended consequences should not interfere with the business of delivering development assistance. The high price of opium poppy and the alleged insurmountable profit of opium production is cited as justification for abrogating responsibility to eradication and interdiction teams even if ill-considered development interventions may have played a role in making matters worse. The relatively high income of those farming opium poppies is also used to justify targeting development assistance in areas where drug crops are not grown; on the basis that those growing illicit drug crops are not the 'poorest of the poor,' and therefore not part of the mandate of the development donors.

It is the contention of this paper that this fundamental misalignment between a development community focused on improving the welfare of the Afghan population and the challenges of addressing widespread illicit drug crop production is in large part a function of the way that opium poppy and the illicit economy is currently perceived and understood - not just by policy makers and practitioners but also by scholars. Much of the problem lies with the various statistics used to describe and quantify opium production in Afghanistan, many of them produced by UNODC and cited repeatedly in media coverage and the academic literature. These statistics shape how we have come to understand the scale and nature of the drugs problem, and thereby have informed policy responses.

The rest of this paper focuses on a number of drug-related statistics, including levels of opium poppy cultivation, the number of farmers involved in opium poppy cultivation, the reasons why farmers grow opium and the economic returns to opium poppy cultivation While it is recognised that collecting data on illicit drug crop cultivation is fraught with problems, it is critical that policy makers and scholars fully understand the veracity of this data - its methodological and conceptual limitations - before using it as the foundations for development programmes or policy responses. Indeed, this paper argues that many of these statistics have presented a simplified and 'profit maximising' model of the factors influencing farmers' livelihoods choices, which has proven deeply misleading and further alienated the development community from engaging constructively with the challenges of illicit drug production in developing countries. .

Estimating Opium Poppy Cultivation

Levels of opium poppy cultivation are often used as an important metric for judging counternarcotics efforts. However, in Afghanistan the rise and fall in the hectarage of opium poppy has also been used as a benchmark for judging the progress of the wider statebuilding project; and not just at the national level but also tied to the performance of individual donor

countries and their development and security investments in specific provinces - most notably the U.S. in Nangarhar, the UK in Helmand and the Canadians in Kandahar.

While there are obvious problems associated with linking the performance of counternarcotics efforts - let alone statebuilding - with annual fluctuations in opium poppy cultivation, there is the added challenge of deciding which figures to use, how to account for significant changes in methodology over time, as well as the problems associated with the disaggregation of cultivation data, particularly in what is the diverse and dynamic socio-economic and political terrain of rural Afghanistan.

There are in fact two sources of data on the extent of opium poppy cultivation in Afghanistan, the UNODC and the United States Government (USG). In the past there were wide discrepancies between the estimates of opium poppy cultivation by UNODC and USG, with a difference of over 80,000 hectares between the two surveys in 2004 (see Figure 1).

Prior to 2002, the UNODC survey was entirely formed on a ground-based 'census', and while pioneering at the time, it had limitations. Based on an assessment of reports of where cultivation was located, surveyors were required to travel to what could be remote and insecure villages and visually estimate the amount of land under opium poppy cultivation. Incomplete information on the whereabouts of opium poppy, insecurity, wide scope for human error, inability to verify data, and the challenges of supervision in the field, were just some of the problems associated with the ground survey at the time.

In the 2001/02 growing season, UNODC introduced commercial satellite imagery for the major opium producing provinces of the south and east, combining it with a ground-based survey in many of the provinces in the center and north where cultivation was not as extensive. With support from Cranfield University following the results of the 2004 survey, and with closer collaboration with USG, the UNODC and USG figures subsequently aligned more closely. In 2015, further changes in the UNODC methodology were made – making comparisons over time particularly problematic (UNODC 2015: 6).

While national data had become more aligned between UNODC and USG, there remain discrepancies at the provincial level rendering explanations for shifting levels of cultivation at the regional and provincial level rather challenging. Part of the explanation for these discrepancies is the different methodological approaches adopted by the two surveys and how they calculate the full extent of the agricultural areas – the agricultural ‘mask,’ how samples are selected and the number of images collected.

These limitations make assessing changes in levels of cultivation at the district level problematic and severely limit the value of using district-level figures for assessing progress against opium poppy cultivation, as in the case of 'conditionality' – where development assistance is made contingent on reductions in opium poppy cultivation.

To properly assess changes in cultivation at the district or community level, it is necessary to conduct a comprehensive review of the area being assessed and establish what crops are being cultivated. While resource intensive, this approach provides detailed data on the different crops cultivated in an area of interest, can support an assessment of the uptake of different legal crops (including orchards, wheat and annual horticultural crops), and thereby can offer

both an assessment of how resilient any reduction in opium poppy cultivation might be and the impact of efforts to expand the cultivation of high-value horticultural crops. This kind of data, produced by USG and analysed by Alcis Ltd, has been used as part of the assessment of the Helmand Food Zone and has provided invaluable data on changing cropping patterns over a five year period (Mansfield et al 2011).

This data, combined with detailed fieldwork examining the changing socio-economic and political environment, and patterns of non-farm income has developed an understanding as to why changes in cultivation have taken place, provided a prognosis as to whether they would be sustained and offered insights into the unintended consequences of drug control and development efforts – not least the likely the relocation of production to neighbouring areas. Unfortunately, it is the emphasis on estimates of cultivation at the provincial and district level - many of which are of questionable provenance - that has become the focus of drug control agencies such as UNODC, and which has left many policy makers and practitioners within the drugs and development communities speculating over causality and disagreeing over appropriate programmatic responses.

The Number of Farmers Growing Opium Poppy

A further statistic that became a benchmark for the scale of the drug problem in Afghanistan, and was often cited in scholarly and policy papers along with the media, was the number of farmers growing opium poppy in Afghanistan. This data was produced by UNODC between 2003 and 2010, with estimates ranging from a low of 245,000 in 2009 to a high of 509,000 in 2007 (see Figure 2). At the time, this was seen as an important metric by which to assess the importance of opium production to the Afghan economy and how it was changing over time. With an average of between 6.2 to 6.5 people per household, the number of people involved in opium poppy cultivation was reported to be as many as 3.3 million people, or 14.3% of the total population, in 2007, falling to 6% in 2010 (UNODC/MCN 2007: 7).

There are, however, some major challenges with this particular metric. The most obvious is establishing a meaningful estimate of the number of households involved. Here the most serious issue is whether farmers are actually in a position to answer questions regarding the households in the village and their activities to the degree of integrity required. This problem is compounded when researchers are enquiring about sensitive or illegal subjects, phenomena that change markedly over time, or practices that are somehow concealed, or which take place in private rather than public spaces.

Evidence over the last few decades suggests that there are significant challenges with regard to the knowledge of village members and the veracity of their responses about the farming practices of other households in the same village. There are further concerns regarding the nature of the questions asked and whether phenomena are adequately defined or understood in the same way by all those interviewed. A critical issue is when asked about *'the number of households involved in opium poppy cultivation <u>in this village</u>,'* do all respondents have the

same understanding of who should be included? For example, where there is a landowner that cultivates opium poppy but employs a sharecropper to work the land, would this be reported as one household or two? In some cases, particularly in the south and east, even if sharecroppers have worked in the village for many years, they would not be considered as being of 'this village' if they did not own land, and hence would not be included in the response. Further, labourers residing outside the village of enquiry but working there during the opium poppy harvest as itinerant labourers would not be included by those that actually live in the village as being of 'this village.' Nor would these labourers be counted elsewhere if they came from a village that had no history of opium poppy cultivation, since they would not be covered by UNODC's village survey.

Meanwhile, UNODC reports that 1.5 million people were involved in opium poppy cultivation in 2010, a fall of 1.8 million from 2007 when it estimated that 3.3 million people were involved. These figures were calculated on the basis of an assumed average household size of 6.5 people. However, the National Risk and Vulnerability Assessment – which serves as Afghanistan's National Household Survey, suggests a national average of 7.3 persons per household, which would result in a markedly higher number for the estimated total number of people involved in opium poppy cultivation (CSO 2013/14: 12). Other data collected in the rural areas in which opium poppy is grown at its most concentrated consistently suggest significantly larger household sizes than the national average. For instance, the NRVA reported an average household size in Helmand province of 9 persons in 2005, while other surveys have consistently reported even higher figures of almost 13 household members (CSO 2005: 88; UNDP 2000: 1) SCA 1992).

Indeed, there are questions about how representative national data is of the areas in which opium poppy is actually cultivated. The level of insecurity tends to limit access for formal surveys in the parts of the country where opium poppy has become concentrated. There is the added challenge that some of these hard-to-reach areas, such as the former desert areas in the south, have experienced such a dramatic transformation over the last few years that many official data collection tools have found it hard to keep up. For example, remote sensing imagery shows that between 2003 and 2013 the amount of land under agriculture in the former desert areas of south and south west Afghanistan increased by as much as 265,000 hectares, much of which was cultivated with opium poppy (Mansfield 2015). Official statistics barely recognise this growth or the estimated population of up to 1.2 million people that resides there. At best, the data on the number of farmers involved in poppy cultivation in Afghanistan was incomplete, while at worst it was highly inaccurate and misleading.

The Reasons Why Farmers Grow Opium

Integral to how policy makers and scholars perceive illicit drug crop cultivation and those that grow it is the data produced on why the crop is grown. Each year since 2006, UNODC has asked a sample of farmers the reasons why they cultivate opium poppy. The high price of opium has typically been recorded as the most popular response to this question, cited by 41% of respondents in 2006: 25% in 2007; 74% in 2008; 61% in 2009; 41% in 2010; 59% in 2011; 44% in 2012; 72% in 2013; and 44% of those interviewed in 2014 (UNODC 2006: 73; UNODC 2007: 99;

UNODC 2008: 105: UNODC 2009: 79; UNODC 2010: 62; UNODC 2011: 60; UNODC 2012: 54; UNODC 2013: 51; UNODC 2015: 33). In fact, 'high price' has been the most frequent response every year of the survey with the exception of 2007 and 2008, when 'poverty alleviation' was the most popular response by farmers, cited by 29% and 92% of respondents respectively in those two years (UNODC 2006: 99; UNODC 2008:105).

In fact, 2008 seems anomalous given the huge proportion of farmers citing 'poverty alleviation' as their reason for cultivating poppy compared with other years, where typically no more than 15 per cent of those interviewed gave this response. On the surface, the high frequency of this response could be a function of negative economic circumstances in 2008. However, closer analysis suggests it could be a methodological issue - 2008 apparently being the only year when UNODC reported against multiple responses for cultivating opium poppy rather than just one. In 2009, the annual opium poppy survey reverted back to reporting only a single response from farmers. From then until 2014, almost none of the other reasons for cultivating opium poppy, mentioned so frequently by respondents in the 2008 survey and recorded in 2007, are cited by more than 15% of those interviewed each year, and the 'high price of opium' became by far the most frequent response reported each year, irrespective of whether opium prices had in fact risen or fallen.

The difference between what is reported in the 2007 and 2008 surveys, and the responses in the 2008 report, highlight the conceptual and methodological weaknesses of an approach that attempts to distil the complex and interconnected factors that inform household decision making into a single answer. At its most basic, recording and reporting only one response denies the multifunctional role that opium poppy plays in rural livelihood strategies. Moreover, none of the responses listed and tabulated by UNODC are actually mutually exclusive. The recording of only one answer, without any contextual background on those responding, also fails to recognise the fact that farmers with different assets may weigh the multiple reasons why they cultivate opium poppy in quite different ways.

For example, it is quite possible for a land-poor farmer to cultivate opium poppy as a means of accessing both land – and thereby water – as well as credit, to achieve the outcome of food security, while at the same time wishing to produce opium to pay for his son's wedding. Such a marriage would achieve a range of other outcomes, which might include fulfilling his son's wishes, securing lineage, and possibly establishing familial bonds with a relatively wealthy and influential family in the community. Marriage to a more prosperous family may in turn secure access to other assets in the future, including land, non-interest bearing credit (known as *qarze hasana*), or perhaps to gain the kind of patronage that might support another son getting a job or even ensure the family's protection from an ongoing or potential conflict with a neighbour.

For this individual farmer, the high price of opium is almost irrelevant. He may have sold most of his share of the opium crop in advance the previous year so that he could meet the bride price and secure his son's future wife. He might have also sold what little residual opium he had, in the spring prior to this year's harvest, so that he could cover his wheat deficit and feed his family. The result of these advance sales might well be that once the crop was finally harvested, he would have little or no opium to actually sell on the open market.

Therefore, for this farmer, the relatively high price of opium at the beginning of the season would only be important in that there might be more land available under sharecropping arrangements that year, particularly from the influential landowners in the village who had established good relations with the local security commander, and possibly anti-government elements, as a way of insuring themselves against crop destruction. The farmer's familiarity with how to cultivate opium poppy would mean that he had an increased probability of getting this land, and due to the landlord's relationship with local powerbrokers, a greater probability of obtaining a yield than other farmers who had not built these kind of alliances. In this context, 'high price' may have featured as a response by this farmer as shorthand for 'it works,' but it's importance was rather minor compared to the other assets that opium ensured access to, some of which the farmer might not have even given to the enumerator during a short discussion, in his desire to avoid disclosing sensitive information on both opium production and the household's financial circumstances.

This points to a further problem beyond the conceptual problems associated with recording and reporting only a single answer to a direct question on the reasons for opium poppy cultivation: the clear challenges of asking farmers direct questions about an illegal activity in the complex political landscape in which opium poppy is grown in Afghanistan. This more direct line of enquiry raises concerns over how security issues and the presence of armed actors (state, insurgents and others) not only impacts on the selection of respondents, but also how it affects respondents' answers. There is great potential for a bias in favor of more secure, peri-urban areas on the part of those conducting the survey, and also the likelihood of social desirability bias by respondents (Pinney 2010). However, if contextual data is gathered about what shapes the decisions of farmers, it could provide a basis for recasting the conversation to make it less threatening, as well as information to support verification of findings.

In conclusion, both the methods and the findings reported are problematic. Reducing the myriad of factors that inform poppy cultivation to a single response is simplistic and potentially very distortionary. It ignores how the decision to cultivate is shaped by individual, household, and community assets, values and behaviour. It overlooks the rules that govern how households access the factors of production, and neglects both the complex political environment in which opium poppy cultivation takes place, and the multiple and often competing institutional interests at play. Finally, it ignores the multifunctional role that opium poppy plays in rural livelihoods and how these roles vary across different socio-economic groups and locations.

The Economic Returns to Opium Poppy

The economic returns to opium are typically presented in the UNODC annual survey, and cited by others, as gross returns, and compared with the gross returns on wheat. This is calculated by multiplying the price of opium/wheat by the average yield. The focus on gross returns presents a number of problems:

- Both estimates ignore the by-products of each crop;
- There are considerable differences in input costs between opium poppy (an input-intensive crop) and wheat (typically grown using only family labour);
- Opium and wheat are presented as the only alternatives to each other and mutually exclusive, whereas there are a number of other cropping options, and opium poppy and wheat are often grown on the same land over time as part of sensible crop rotation practices aimed at achieving food security through a combination of direct and exchange entitlement.

By-products

Both opium and wheat have by-products that can be either sold or used by the household. Opium has two by-products, poppy straw and seed. Neither are included in UNODC's calculations of gross returns.

Poppy straw is typically used as fuel for households, saving on the purchase or gathering of firewood or alternative fuels. It is estimated that a jerib (1/5 of a hectare) of opium poppy can provide fuel for a household for around six weeks, saving around $1.00 per day (Mansfield 2010:20). The straw can also be sold on the open market.

Poppy seed can also either be used or sold. It can be processed into cooking oil by small household presses, with the resultant waste, known as *khunjara*, fed to livestock. An alternative is to sell to local traders who sell it on to larger traders who transport the seed to Pakistan for production into edible oils. Given the amount of poppy seed produced each year and the small amount of seeds required for planting, there is a significant amount of seeds available for sale or use. In the south, one hectare of poppy produces an estimated 60 to 75 man of seed (the equivalent of 270 to 337.5 kg) which in 2009 sold for 300 PR/man. Farmers estimate around 2.5 to 5 man (the equivalent of 11.25 kg to 22.5 kg) of seed is required to cultivate one hectare of opium. This leaves 55 to 72.5 man per hectare cultivated (the equivalent of 247.5 kg to 326.25 kg). If this is applied to the 209,000 hectares of opium poppy cultivated in 2013 – and assuming the same level of cultivation in 2013/14 – there would be a potential surplus of 51,727 to 68,186 metric tonnes of poppy seed available for sale. As late as 2005, poppy seed was still a legal export and listed in official statistics (CSO 2009:205).

With regard to the by-products of wheat cultivation, Maletta (2004:2) stated that '*any attempt to analyze the wheat crop as an activity conducive only to the production of grain would be deeply flawe*d.' In practice, wheat straw plays an important role in the household economy. In particular, it serves as feed for livestock during the winter months, allowing households to retain their animals and sell them in the spring at higher prices than if they had to sell them in the previous fall.

As such, wheat straw is an important input into livestock and its by-products such as *ghee* (clarified butter), *krut* (dried cream) and wool. In turn, livestock manure is used as a fertiliser and mixed with wheat straw for use as household fuel. Wheat straw is also used in the production of mud bricks and in house construction. The yield of wheat straw is high and there is the potential for a unit of land to yield up to twice the weight of wheat straw as of wheat. The straw can also be sold on the open market. Prices vary depending on availability and season, but in the north during the winter, wheat straw can sell at a price that is commensurate with the value of wheat grain (Johnston and Povolny, 2007: 21). Consequently, failure to include the value of wheat straw can result in the gross returns on wheat being significantly undervalued.

Inputs

UNODC's comparison of economic returns to wheat and opium poppy does not reflect the significant differences in input costs, despite the input-intensive nature of opium production. For opium, farmers incur higher costs for land preparation; use more fertiliser per unit of land; spend money on diesel for a tube well, or hire the use of a pump when there is insufficient irrigation water. Furthermore, while all crops are subject to an agricultural tithe payable to the local mullah, opium production incurs additional costs in the form of payments to corrupt government officials to avoid eradication or payments to insurgents.

Most important is the large difference in labour requirements. Opium requires an estimated 360 person-days per hectare, compared to an average of only 31 person-days days for rain-fed wheat and 64 days for irrigated wheat (Mansfield and Pain 2008:16; Maletta 2004: 24). While wheat can be largely managed by household labour, opium usually requires costly labour during the harvest season, with daily wage rates on occasions reaching $20 per person-day in 2013 in areas such as Bakwa in Farah and Khanishin in Helmand.

To minimise the need for hired labour, farmers have pursued a number of strategies including staggered planting, cultivating different varieties of opium poppy with different maturation periods, engaging in reciprocal labour arrangements, and maximising the use of household labour, including women and children. Wealthier households have been found to prefer to recruit labour under sharecropping arrangements, as well as offering advance payments on the future opium crop as a way of increasing their returns at the expense of farmers with limited land and capital. As Table A2 shows, such is the value of the by-products of wheat, and the costs of inputs for opium production, that the net returns on wheat can be comparable with those of cultivating opium poppy, for example in 2008. Prior to 2008, wheat was estimated to have generated higher net returns than opium poppy cultivation in a number of districts in the southern region of Afghanistan in 1994, 1997 and 1999 (UNDCP 1995; UNODC 1997: 11; Mansfield 2002). However, it should be kept in mind that opium prices in the 1990s were considerably lower than they have been over the past decade and currently.

Socio-economic differentiation

A further issue is the uneven return to different socio-economic groups involved in opium poppy cultivation. UNODC typically reports gross returns per hectare, derived by multiplying the average yield by the average farm-gate price at harvest time. The costs of production, as reported by farmers, are then subtracted from this gross figure to derive a net return per hectare. It is not clear whether the production costs reported by farmers are actual costs or a percentage of the gross (UNODC 2013: 62). In 2013, UNODC reported a gross return of $4,500 per hectare and a net return of $3,600 per hectare, the equivalent of $900 and $720 per jerib, respectively (UNODC 2013: 10).

Net returns will vary depending on both the inputs and the outputs (including the by-products) of the final crop. Data highlighted elsewhere show how much gross returns varied over a relatively short distance in central Helmand during the 2013 growing season, ranging from $900 to $1,424 per hectare – a function of the different yields obtained in the former desert areas north of the Boghra canal compared to those in the canal command area itself. Most importantly, these data offer a calculation of the contrasting net returns to different socio-economic groups. It notes the different land tenure arrangements, how these differ between the canal command area and the former desert areas north of the Boghra, and what this means in terms of the net returns on cultivation. It shows how markedly different net returns are, depending on whether farmers own their own land, whether they use family or hired labour, including during the harvest period, and according to the different sharecropping arrangements under which farmers gain access to land. At the extreme the net returns in 2013 to a landowner - who used no hired labour at all - varied from $167 per jerib in the former desert area to $997 in the canal command area. If hired labour was used during the harvest, both saw a fall in net returns; however, the landowner in the former desert area actually incurred a loss of $34 for each jerib of opium poppy cultivated.

The losses are even more significant for landowners who met all the costs of production but employed a sharecropper who was given three quarters of the final crop. Under this arrangement, the landowner made a net loss of $251 per jerib whereas the sharecropper actually made a net gain of $224 per jerib.

As indicated in another report, not only do estimates of the gross (or even net) returns fail to capture the on-farm income different socio-economic groups actually derive from its sale, but they also ignore the different functions opium plays in the wider household economy. For instance, for the sharecropper in a former desert area, opium not only provides an on-farm income with which to purchase food, but it also provides a place to live - something he had lost access to when opium was banned in the canal command area and landowners moved to less labour-intensive crops that they could manage with their own family labour. As the only crop valuable enough to cover the costs of establishing a tube well as well as the running costs, opium production also cross-subsidises the production of food crops, such as wheat, and a small amount of summer vegetable production, as well as providing drinking water for the household and their livestock. None of these in-kind benefits are included in any calculations of the returns on opium poppy, but they can be just as important in determining levels of cultivation as the on-farm income that farmers expect to earn from opium production.

Staples versus cash crops

It is also important to recognise the different roles these crops play in the household economy and how this impacts on the allocation of both labour and land. Maletta (2004: 4) has outlined how small landholdings, low yields, and high population densities in Afghanistan preclude the majority of farmers from achieving (let alone surpassing) self-sufficiency in wheat and deriving any monetary value from its production. The result is that for the vast majority of farmers in Afghanistan, wheat is a staple and not a cash crop, and as such the presentation of the gross returns (or even the net returns) on the two crops is misleading.

For most farmers, an increase in the price of wheat does not result in a shift to commercial wheat production, even if the net returns on wheat production surpass those of opium. Instead, high wheat prices are seen by farmers as bringing about an increase in the cost of food that needs to be managed by the household. This is especially the case where there are concerns over wheat imports from neighbouring countries such as Pakistan, and where violence and conflict make it difficult to travel and purchase wheat at the local market.

For farmers who own sufficient land an increase in wheat prices may result in an increase in wheat production. However, this will largely be at the margin, where households may forego some of the land that they had cultivated with cash crops the previous year (including opium poppy) to produce extra wheat for family consumption. It should be emphasised that this shift to wheat is not driven by the pursuit of profit and commercial production, but rather by the need to hold down financial outlays for a staple food and to secure wheat supply.

However, for the vast majority of Afghan farmers, small landholdings and the large number of household members mean that they cannot meet their household food requirements even if they allocate all of their land to wheat. For these farmers there will always be a need for cash income to make up any food deficit, and to manage the risk of crop failure. Therefore, in response to increasing wheat prices these farmers will persist with cash crop production and where possible pursue wage labour opportunities so that they can meet the rising cost of wheat flour on the market. For farmers that do not own any land at all and gain access to land through sharecropping or tenancy arrangements, an increase in the wheat price may force them off the land altogether, if landowners look to ensure food security by substituting wheat for opium poppy and no longer require sharecroppers or tenant farmers to manage the land due to the lower labour inputs required for wheat production. Moreover, if sizeable landowners are prevented from opium cultivation (*i.e.* by an effective ban), they will make ends meet cultivating wheat, but will eject sharecroppers who had been on their land cultivating opium poppy and instead engage in wheat cultivation entirely or largely with household labour.

The varying responses to an increase in the price of wheat from farmers with quite different landholdings reflects the inadequacy of the current comparison of the economic returns on opium and wheat. Not only does it portray a far too simplified model of farmers as economic actors having solely income maximising objectives, choosing between two crops grown with quite different functions and inputs, but it also presents an image of farmers as homogenous, landed, shaped by the same aspirations and preferences, and in a position to respond to shifts in prices by simply reallocating inputs from one activity to another. This is clearly not the case

in rural Afghanistan, and it distorts our understanding of those who are engaged in drug crop cultivation and how they respond to efforts to encourage them to abandon it.

Of course, a range of other crops are cultivated in the winter alongside opium poppy and wheat, including onion, spring onion, garlic, clover, spinach and squash, which rarely figure in comparisons with opium poppy. There are also crops that are planted in the spring, such as watermelon, melon, cotton, eggplant, cucumber, tomato, pea, green bean and okra, all of which compete with opium poppy for both household land and labour, but only between February/March and May when opium is harvested, and not for the entire winter growing season.

Estimates have shown that the potential net returns on these cash crops have often been favourable. For example, research in Nangarhar in 2006 showed higher net returns for *gandana* (a type of leek), onion, okra and potato, squash, and tomato than for opium poppy (Mansfield 2006: 22). In Badakhshan, Johnson and Polovny (2008) reported higher net returns from tomato, eggplant, onion, cucumber, carrot, turnip, cauliflower, and okra than for opium in 2007. Moreover, unlike opium poppy, many of these crops can be intercropped, and farmers have been found to have as many as five crops cultivated on the same unit of land at the same time.

Given the multitude of crops that compete with opium poppy for the factors of production in Afghanistan, and the fact that many can be grown alongside each other as a way of managing pests, labour inputs, and risks of crop failure, it remains unclear why we are still only presented with a comparison between the gross returns on wheat, a crop grown primarily for consumption, and opium, an input-intensive and labour-intensive cash crop. In addition to being misleading, such comparisons may further distort policy thinking, not least by giving an impression that the primary alternative to opium poppy is wheat, which could not be farther from the truth.

Conclusion

Statistics shape how we view the world, particularly when they describe activities or population groups that few have direct experience of such as is the case with illicit drug crop production. As this paper has shown, many of the statistics used as both descriptors of illicit drug crop production and metrics for assessing the performance of drug control measures are conceptually and methodologically weak. Guilty of drugs fetishism - viewing the world solely through the prism of drug production and drug control measures - these statistics give little or no consideration to the wider socio-economic, political and environmental context inhabited by those individuals and communities that cultivate opium poppy and coca.

Indicative of this fetishism is the reductionism with which the communities that cultivate drug crops are described. In the case of Afghanistan, drug control agencies such as UNODC depict rural households in binary terms, as either ‘poppy farmers’ or ‘non poppy farmers.’ Their livelihood activities are circumscribed by a comparison of the gross returns on opium and

wheat and by statistics which assert that it is simply ‘high price’ that motivates farmers to cultivate opium poppy: a caricature that is frequently perpetuated in the media and in some of the scholarly literature (UNODC 2013: 63-64; Caulkins et al: 2010; Keefer and Loayaza 2010: 95-134).

These statistics fail to capture the diversity of drugs cultivating contexts and the varied patterns of opium poppy and coca cultivation within a single source country. They simplistically portray those who cultivate drug crops as homogenous economic actors driven by the desire to maximise income; either for the purpose of conspicuous consumption - 'the greedy' - or as a means of escaping poverty - 'the needy.' (Chouvy 2009:158). Risk is largely considered in the context of the state acting to destroy the crop. How different households and communities living under different circumstances and political orders experience and manage the risk of the imposition of a ban or crop destruction is largely neglected, as is the diverse risks and opportunities that households and communities associate with engaging in activities related to 'the legal economy.' As the critique of these statistics has shown, there is much in the current portrayal of drug crop-producing households that, to quote Durrenberger (1980: 134) in his discussion of Chayanov’s seminal work on the peasant economy, 'do not match the realities observed.'

This process of abstraction, methodologically by asking specific drug related questions, and conceptually by producing data describing those that cultivate drug crops that is distinct from the assets, institutions, organisations, policies and legislation that shapes their livelihoods, offers little of analytical value to those practitioners actively engaged in development in rural areas where opium poppy and coca are grown. Confronted with real examples of households and communities transitioning out of illicit drug crop production through the diversification of on-farm, off-farm and non-farm income, and the provision of public goods, development practitioners are confounded by the drug control community's reaction to a rise in aggregate levels of cultivation - even though the increases may have occurred in a more remote and less well-endowed part of the province. They are further undermined by explanations of cultivation that are reduced to price, profit and high income, and abstinence to the activities of the state and its campaigns of eradication and law enforcement.

Although these explanations for shifting levels of cultivation often have little empirical basis they have provided development policy makers in western capitals, already nervous about engaging in what is undoubtedly a complex and highly politicised issue, the reason to abrogate responsibility to a drug control community that lacks expertise in rural livelihoods and the political economy of conflict affected states. The result is the kind of simplistic models of rural development that have been so common in Afghanistan and other drug producing countries, where development assistance is a means to leverage reductions in drug crop cultivation from rural elites and power brokers - the oft cited ‘carrot and stick’ - while development outcomes and how they are distributed go largely unnoticed.

It is clear that development organisations need greater support in developing a better understanding not only of the diverse circumstances and motives that influence drug crop cultivation but also of the different pathways that households follow when they transition out of opium and coca production. Greater academic research in this area will help, supported by a

much more discerning review of current drug related statistics by scholars and development policy makers alike.

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