



# Time to Move on: Developing an Informed Development Response to Opium Poppy Cultivation in Afghanistan

David Mansfield, Paul Fishstein and OSDR

October 2016



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**Afghanistan Research and Evaluation Unit**

**Synthesis Paper**

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## About the Authors

David Mansfield (PhD in Development Studies) is a visiting scholar at Columbia University. He is also an independent consultant who has undertaken fieldwork on the role of opium poppy in rural livelihoods in Afghanistan for 19 consecutive growing seasons. He is the author of “A State Built on Sand: How opium undermined Afghanistan.”

Paul Fishstein (MS, Agricultural and Resource Economics) is a former director of the Afghanistan Research and Evaluation Unit. Since 1977, he has worked in the implementation of development and humanitarian programmes and in research in both Afghanistan and Pakistan. He is currently an independent consultant.

The Organisation for Sustainable Research and Development (OSDR) is a non-governmental, non-political and non-profit organisation created in 2008 by a group of committed Afghans with aims of working in the field of survey, monitoring and evaluation, disaster risk management, sustainable development and agriculture capacity building.

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AREU was established in 2002 by the assistance community in Afghanistan and has a Board of Directors comprised of representatives of donor organisations, the United Nations and other multilateral agencies, and non-governmental organisations.

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David Mansfield and Paul Fishstein  
October 2016



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## Acronyms

ANDSF	Afghan National Defense and Security Forces
AREU	Afghanistan Research and Evaluation Unit
DAP	Diammonium phosphate
Ha	Hectares
ISAF	International Security Assistance Force
kg	Kilogramme
MCN	Ministry of Counter Narcotics
NPP	National Priority Programmes
NRVA	National Risk and Vulnerability Assessment
OSDR	Organisation for Sustainable Development and Research
PR	Pakistani rupees
UN	United Nations
UNODC	United Nations Office on Drugs and Crime
USAID	United States Agency for International Development



## Glossary

<i>Afghani</i>	(Afs) Afghan unit of currency, with exchange rate of US\$1 = approximately 68Afs during the period of fieldwork
<i>bar</i>	Bag of opium poppy straw with weight equivalent to twelve Kabuliseer (84 kilogrammes)
<i>chiqa</i>	Concentrated form of yoghurt from which water has been drained
<i>gandana</i>	Type of leek
<i>jerib</i>	Measure of land area equal to 0.494 acre or roughly one-fifth of a hectare
<i>karez</i>	Traditional irrigation system consisting of underground canals that tap aquifers through a series of subsurface tunnels
<i>kunjara</i>	Oil seed cake used as animal feed.
<i>lekha</i>	Sharecropping arrangement in the former desert areas by which sharecropper pays all variable costs of production and receives five-sixths or six-sevenths of the crop
<i>mamata</i>	Garden within the household compound where fruit and nut crops are grown
<i>mirab</i>	Village water master
<i>qarz-e hasana</i>	Loan given without interest or expectation of reward or profit
<i>qorut</i>	Dried cream
<i>seer</i>	Unit of weight equivalent to roughly seven kilogrammes in Kabul, 14 in Mazar, and 1.2 kg for opium in Nangarhar
<i>chars</i>	Hashish or the plant from which it comes ( <i>cannabis sativus</i> )
<i>dasht</i>	Desert, here mostly referring to the area north of Helmand's Boghra Canal.
<i>khord</i>	Measure of weight equivalent to 112.5 grammes
<i>maun</i>	Measure of weight equivalent to 4.5 kg
<i>Zaranj</i>	Type of motorbike which can transport people and goods



## Executive Summary

After almost 15 years since the fall of the Taliban, the policy discussion on counternarcotics remains uncertain of which way to proceed. In large part, this is because policy discussion is shaped by a superficial or misguided understanding of opium poppy and its role in rural livelihoods.

This is not surprising given the disconnect that policymakers and the international community in Kabul have from rural realities, in large part due to the inability to get out of Kabul or even their own compounds. Another part is the natural tendency to downplay or even ignore problems which appear to be intractable. Many of the policy proposals reflect past thinking which has not proven successful, most notably the search for a “silver bullet” or one single crop that can compete with opium poppy.

This focus is in large part the result of the way in which data and analysis have been presented to policy makers, in particular the annual estimates of opium area and yield presented by the United Nations Office on Drugs and Crime (UNODC) along with its analysis of the reasons why farmers grow opium poppy. The most problematic aspects of that methodology are 1) the analysis of why farmers grow opium poppy, and 2) the assumption of a binary choice between wheat and opium poppy.

Additional shortcomings are the limitations of the profit maximization model; drugs “fetishism”; focus on gross rather than net returns; endless search for the “silver bullet” (the single crop) which will replace opium poppy; assumption of a homogenous farmer; flawed survey methodology which relies on single responses and fails to correct for social desirability bias; and, lack of willingness to incorporate the work of others.

The analysis in this report is based on fieldwork undertaken in the provinces of Balkh, Helmand, Kandahar and Nangarhar during the harvest and planting seasons of the 2014/15 and 2015/16 agricultural years.

The analytical approach is based on the livelihoods framework in which opium poppy is seen as just one crop in a larger, complex system of agricultural commodities, livestock, and off-farm and non-farm income opportunities. More than a decade of fieldwork has allowed the incorporation of the effects of politics and power on farmers’ decision-making, as well as questions of varying conditions, especially those that prevail in such vastly different areas as the former desert areas of the southwest.

The current approach uses multiple methodologies, including extensive surveys of farmers in the field along with GIS and geo-spatial mapping which assists with research site selection and allows visualization of changes over time in settlements and cropping patterns.

Analysis also distinguishes between use of household and hired labour (extremely important in a high-input crop such as opium poppy) and between owner cultivated land and sharecropped land. It reflects variations in fieldwork sites with respect to resources, infrastructure, access to markets and tenure arrangements, so as to capture the diversity in rural Afghanistan. Data collection utilized indirect questions in the field with farmers themselves, thereby avoiding the kind of speculation and bias that interviewing rural elites typically produces. Of course, the usual caveats associated with fieldwork in rural Afghanistan should be kept in mind, and this work should be seen as a “first cut” or “snapshot” that tries to capture conditions within a particular time frame.

Fieldwork confirmed that, contrary to conventional wisdom, dramatic change is taking place in Afghanistan’s rural economy, as farmers experiment with new varieties, complex cropping systems, and new technology such as chemicals and solar-powered water pumps. In part due to the development of transport and communication infrastructure, rural areas are more and more integrated with urban markets, and off-farm employment has become an increasingly important component of household livelihoods.

Not all of this change is positive or sustainable in the long run, especially that which drains aquifers and potentially causes harm to humans, and much of it comes out of a desperate attempt to deal with adversity both agronomic and man-imposed. One of the most striking and consequential



transformations is the settling of the former desert areas of south and southwest Afghanistan. The deserts have been made to bloom, although much of the flowering is opium poppy and it is not clear how sustainable life in the former desert will be.

## Findings

- ***Analysis of net returns provides a different, more complex picture than simply looking at gross returns.***

Gross returns for opium poppy are high but so are input costs, especially for households who have to hire labour. Poppy's higher costs including land preparation, fertilizer and especially labour. Other competing crops have lower gross returns but also lower costs, which may make them attractive to farmers, especially when considering valuable by-products such as wheat straw which is used for animals and for construction. Under the right combination of prices, net returns, even for wheat can be comparable to opium poppy.

In the 2015/16 agricultural year, opium poppy was profitable due to the high crop price, the recovery of yields in the southwest after several years of crop failure, and the low price of diesel, although in the previous years this was not always the case.

- ***The dichotomy often presented between wheat and opium poppy is misleading, and is inadequate to portray the decisions that farmers face.***

The wheat-opium poppy dichotomy formed the basis for the assumptions underlying Food Zones programming and for defining its components, which is why they were not successful.

- ***A cropping system approach provides a different and more useful perspective on how farmers construct their livelihoods.***

Individual crops cannot be seen in isolation from one another, but rather must be seen as part of a larger whole which recognizes complementarities as well as accounting for both exchange and use value of crops. The choice to grow opium poppy rules out other cropping options due to seasonal overlap and soil nutrient requirements, although Afghan farmers are increasingly using multiple cropping seasons by taking advantage of short-season crops which can increase cash income to be commensurate with that earned by opium poppy. Some scenarios for diversified cropping patterns allow returns comparable to opium poppy if farmers can take advantage of short-season crops and these complementarities (e.g. wheat straw as input into livestock production). At the same time, while it is not possible to grow three seasons of opium poppy on the same land in one year, in some areas farmers are able to manage two and even three opium poppy crops on different land.

- ***Attractive prices are necessary but not sufficient to motivate farmers.***

Opium poppy is not grown solely for financial returns; rather it plays a multi-faceted role in rural livelihoods, including providing access to land and housing for the landless and land-poor and access to liquidity. When farmers attribute their decision to grow opium to the "high price," this may just be shorthand for 'it works'.

- ***Afghanistan's rural economy is increasingly diverse and dynamic, not simply "stuck in the past".***

Contrary to conventional belief, Afghanistan's rural economy is not static and hidebound. Recent years have seen the widespread adoption of new technology and innovation, including tubewells, solar-driven water pumps, and "plastic" in fields to increase yields. Some of the dynamism is in response to market opportunities, especially where resources are favourable and farmers have proximity to urban markets, such as the case in certain areas of Nangarhar. At the same time, some of the dynamism represents adaptation



to various shocks and adverse conditions, both agronomic and man-imposed, and many rural areas remain trapped in non-diversified, low productivity agriculture. The expansion to the *dasht*(desert) in Helmand represents a combination of many of these factors technological innovation in response to a man-induced shock (the banning of opium poppy cultivation within the canal area) which also carries the risk of damaging the environment through depletion of scarce water resources.

- ***Non-farm and off-farm income is increasingly important for rural livelihoods.***

Given Afghanistan's growing population and increasing pressure on the land, non-farm income has become a critical part of most households' livelihoods picture, even in rural areas. Increased opportunities for off-farm employment can raise the opportunity costs of growing opium poppy, and help to draw people away from it.

- ***Financial benefits of opium poppy cultivation vary by socioeconomic group, especially with respect to access to land.***

Disaggregated analysis is necessary to capture the variation due to local conditions and the positions of different socioeconomic groups. The landless and land-poor have access to land largely on worse terms or on terms which transfer risk to the cultivator; i.e. the emergence of a new sharecropping arrangement in the former desert areas of Helmand which can disadvantage the sharecropper. In general, the net returns to those who sharecrop opium poppy are significantly lower, especially in Helmand, where under some conditions they may even be negative.

- ***Food security considerations take primacy for most households.***

As most households are net buyers of wheat, a rise in its price hurts most of them. A rise in the price of wheat may also result in the landless and land-poor losing access to sharecropped or leased land; as wheat becomes relatively more valuable, landowners may decide to cultivate more of this less labour-intensive crop, and therefore not need to rent their land to others to grow opium poppy. Households incorporate risk into their decision-making, taking into consideration the unreliability of Pakistani wheat imports and the uncertainty of domestic markets at a time of insecurity.

## Recommendations

- Assess all national, multilateral and bilateral programmes for their impact on the production, trade and use of opium and of its derivatives.
- Conduct a comprehensive counternarcotics review of the National Priority Programmes.
- Look beyond simple and outdated models of crop substitution.
- Use performance measurement to prioritize the assessment of crop and income diversification.
- Focus development investments in those rural areas where investments will both deliver realistic outcomes and be practicable.
- Strengthen the technical and strategic capacity of the Ministry of Counter Narcotics (MCN).
- Abandon the crop comparisons that have dominated the analytics of opium production in the literature of UNODC and the MCN.
- Recognise that interventions that raise the opportunity cost of labour would have the greatest impact on reducing opium production.
- Provide new lands to the agricultural poor so that they can diversify what they grow, rather than having to cultivate opium poppy on the land of others.



# 1. Introduction

Much of the debate over what to do about opium poppy cultivation in Afghanistan is locked in the past. It is often shaped by a superficial understanding of the crop and its role in rural livelihoods, as well as an ignorance of the processes that have led to some farmers successfully transitioning out of opium poppy cultivation and others abandoning opium production one year only to take it up again later.

Perhaps we should not be surprised by this disconnect with rural realities. After all, Kabul, the seat of government and the focus of the international community's activities, is an urban environment. Phrases such as "Afghanistan is primarily a rural country" and "80 percent of Afghans live in rural areas"—often repeated in discussions in Kabul and found in government papers—lose resonance when uttered by those with restricted travel and limited exposure to the way that most Afghans live. The dynamism of the rural population is often ignored, and outdated notions of the Afghan countryside can persist when policy makers and donors are separated from the people by distance and Hesco barriers and blast walls.

Within this insular environment, it is particularly easy to forget the dramatic processes of agrarian change that are evident in rural Afghanistan. The rural economy has not remained "unchanged for hundreds of years," as policy makers in the capital are inclined to state. In fact, rural Afghanistan is not as it was even five years ago, let alone a decade. Parts of it have changed dramatically. Farmers are experimenting with new crops and taking up complex cropping systems. They have adopted improved technologies such as herbicides; they have installed shallow and deep wells and are often using solar power to fuel the water pumps. The mobile phone has proliferated, used as much to get information on commodity prices as to contact friends and family in distant areas. Rural transportation has been transformed by the improvement of roads and the invention and widespread adoption of the Zaranj motorbike to carry passengers and/or goods to market.

We only need to look at the hundreds of thousands of rural households that have settled in the former desert areas of south and southwest Afghanistan—unnoticed by the Afghan government's Central Statistics Office (CSO)<sup>1</sup>—to see the extent to which the physical geography of the countryside and the rural economy have been altered forever.

This is not to suggest that everyone's life has changed dramatically in rural Afghanistan or that change has always been for the better: some of the new practices have represented adaptation to adverse conditions. Of course there remain remote areas, where transport and transaction costs are high and market opportunities limited. But even in these areas, many households—particularly those that have access to non-farm income opportunities and that cultivate relatively high-value crops—have also adopted new and improved technologies, taken up new crops and become better integrated into local and national markets.

Despite these facts, policy makers in Kabul can sometimes tie themselves to inaccurate notions of farmers in conflict-affected areas as profit maximisers rather than as managers of risk in a precarious environment. It can be tempting to fall back on simple comparisons of the gross returns on different crops, even those—like opium poppy and wheat—that are grown for very different purposes and require very different quantities (and therefore costs) of inputs.

<sup>1</sup> David Mansfield, WHERE HAVE ALL THE FLOWERS GONE? The real reasons for the drop in the poppy crop in Afghanistan in 2015, Alcis, October 2015. Retrieved from: <https://goo.gl/N5GILV> (Accessed last: 12 September 2016)



Indeed, it is when discussions turn to opium poppy that the international development community appears to have intellectual blinkers fastened tightly and that the evidence of isolation in Kabul becomes most apparent. Similarly, it sometimes seems that only a wilful strategy of choosing to ignore the country's most valuable agricultural commodity could have led to the current National Peace and Development Framework's failure to recognise the important role that opium poppy plays in the country's economy.<sup>2</sup>

When it comes to opium, there is also the tendency to reinvent the wheel—albeit one with broken hubs and a flat tire. With little time to read up on the country or the topic, and with the assumption that they will be only one year in post, new staff in embassies may arrive convinced that they have the solution to Afghanistan's development challenges. All too often, they propose tired ideas that have been heard time and time again. In Kabul, the discussion of opium will quickly move to the search for “silver bullets” in the form of high-value agricultural alternatives. Saffron, almonds, apricots, pomegranates, and even onions have all been posited as effective substitutes for poppy.

The talk of discrete alternative development programs also persists despite a development architecture in Afghanistan unsuited to the kind of multisectoral, area-based projects that were found in Afghanistan in the 1990s, as well as in Pakistan and Southeast Asia. This outdated paradigm owes much to the United Nations Office on Drugs and Crime (UNODC), a specialised agency whose data and publications constitute the main source of information and analysis for the international community and Afghan government officials. Lacking development capacity and unclear on how its drug control mandate relates to development theory and practice, this institution continues to produce material that often presents a simplistic and distorted image of the relationship between opium production and the rural economy. Focusing on comparison of the gross returns on opium poppy and wheat and drawing on statistics collected through imperfect methodologies, UNODC presents an economic reductionist model of human behaviour and agricultural farming systems.

The methodology for producing estimates of opium area and yield has changed over the years, making year-on-year comparisons problematic. But UNODC continues to rely on a methodology for collecting socioeconomic data that lacks the necessary context, academic rigour and depth to yield useful results. Its model of data collection concerning farmer decision making remains dominated by direct questions regarding opium production, asking farmers to explain in a single answer why they cultivate opium poppy and posing questions to rural elites that they are not in a position to answer with anything more than speculation.

In general, UNODC has failed to absorb and build on the work of others. Its resistance to adopting a livelihood approach to the opium economy has fostered “drugs fetishism” and rendered its analysis weak.<sup>3</sup> After almost ten years of research, donors are still presented with the simplistic notion of the average opium farmer comparing the gross returns on two crops—wheat and poppy—before deciding what to grow.

2 The Afghanistan National Peace and Development Framework (ANPDF), 2016-2021 does contain one paragraph on counternarcotics which refers largely to the National Drug Action Plan adopted in 2015. Other than this reference, the 32-page document makes only a few references to “narcotics” and “criminality.” In the more detailed sections on political and security (Section 2.2) and the economy (Section 2.3), it says nothing of the fact that opium is Afghanistan's most valuable export and provides direct employment to as many as 410,000 people (full-time equivalent). In the section on economic growth and job creation and the National Priority Programmes (NPPs), the discussion of development priorities makes no attempt to acknowledge the risk that public investments could in fact encourage opium production; nor is there any effort to build in mitigation strategies.

3 There has been some progress with UNODC's narrative in recent years. For example, UNODC's socioeconomic analysis released in March 2016 borrows some of the language of the livelihoods approach. However, as it still relies on the same data collection methodology as past UNODC surveys, it does not make the break from the economic reductionist model that has plagued the discussion around opium poppy cultivation in Afghanistan. The continued absence of data on household assets means that it is often impossible to verify responses or develop a deeper understanding of the impact of socioeconomic differentiation on access to resources and the composition of livelihood portfolios, including involvement in opium poppy cultivation.



Policy makers who are under time pressure and unaware of the methodological and conceptual flaws turn to UNODC for statistics to cite to politicians and the general public. The media also look to UNODC for an impartial and informed position. Unfortunately, neither policy makers nor the media have the knowledge or time to act as discerning consumers of the reports, or to invest in establishing the veracity of the data and arguments presented. The result is the wide dissemination of statistics that are meant to reflect opium poppy cultivation and its importance in the Afghan rural economy, but that actually distort the facts and mislead policy formulation and operational planning.

The Afghanistan Research and Evaluation Unit (AREU)'s research is shaped by the rural livelihoods framework and the understanding that opium poppy is just one crop in a complex livelihood system that includes other agricultural commodities (many of which are both consumed and sold by the household), livestock, and off-farm and non-farm income opportunities. Refined during more than a decade of fieldwork in the Afghan provinces of Balkh, Badakhshan, Ghor, Helmand, Kandahar and Nangarhar, AREU's work has evolved as its understanding of the political economy of rural Afghanistan has grown and as both rural livelihoods and the role that opium poppy plays in them have changed. The analysis has integrated an understanding of the politics and power that shape rural livelihoods in Afghanistan, including farmers' decisions regarding opium production. This understanding has allowed AREU to predict trends in cropping patterns including the likelihood of a resurgence of opium poppy in particular areas of the provinces where it is working.

As a consequence of this long-term engagement, AREU has often taken a lead in identifying new developments in the rural economy and, in particular, identifying the processes that influence farmers in their decision to cultivate opium poppy. AREU has adapted its data collection and maintained access to some of the most insecure parts of the country. For example, AREU recently published a paper that uncovered the proliferation of solar-powered tubewells in the former desert areas of the South West and highlighted a number of important policy conundrums linking counternarcotics, the environment, illegal land settlement and tenure, and insurgency.<sup>4</sup>

This report builds on AREU's longitudinal work in the field and focuses on fieldwork with farmers in four provinces: Balkh, Helmand, Kandahar and Nangarhar. Drawing on detailed household data and longitudinal crop-mapping data collected over nine years, it offers an insight into the processes of decision making that farmers actually use, rather than any abstract model. The report attempts to shed light on cropping and other livelihoods decisions made by households, and does not touch on law enforcement-related aspects of the opium economy which are an important part of the picture.

The report is divided into six sections, including this introduction. Section 2 provides details on the research methodology. It describes the strengths and weaknesses of the data collection methods, the challenges of conducting fieldwork in increasingly insecure areas, and the difficulties of addressing what can be sensitive issues. Section 3 examines the problems associated with the most commonly used data and analysis on the economics of opium poppy cultivation, the role that price is thought to play as the determining factor, and the misleading comparison that is often made between the economics of wheat and opium poppy.

Section 4 focuses on economic data pertaining to some of the different components of livelihood portfolios in the provinces of Balkh, Helmand, Kandahar and Nangarhar. This section is subdivided into three parts. The first part details the costs of labour, seeds, fertilizer, farm power, and other inputs. It documents the net returns on different crops within the context of a land tenure system that varies greatly within and between regions and that offers different net returns to different population groups involved in farming. This analysis is critical to developing a better understanding of the economic choices that relate to the distribution and use of agricultural inputs, and that reflect what farmers are likely to receive in return to quite different investments. This understanding is critical in considering policy options.

<sup>4</sup> David Mansfield, Paul Fishstein, *Moving with the Times: How opium poppy cultivation has adapted to the changing environment in Afghanistan*, Kabul, AREU, 2016. Retrieved from: <https://goo.gl/4Uy8sL> (Accessed last: 13 September 2016).



The second part of Section 4 builds on the comparison of net returns on different crops and explores how these sit within a wider cropping system. This part takes account of cropping seasons, rotation, and maturation periods. It shows how farmers intercrop and exploit short-season crops and new off-season varieties to better manage risk and increase net returns over a number of agricultural seasons. Again, net returns are calculated for different land tenure arrangements, to highlight how the distribution of monetary and non-economic benefits differs among socioeconomic groups with different resource endowments. The third part of Section 4 takes this analysis a stage further and introduces the returns to the household as a whole, including the returns on animal husbandry and on labour for those households where members are engaged in off-farm and non-farm income opportunities. This final stage of analysis offers a data-derived account of the livelihood portfolios of rural households in Afghanistan and the role that opium plays within them.

Section 5 offers a conclusion, and Section 6 contains recommendations for moving towards a more effective strategy to address the deleterious effects of illicit drugs on Afghanistan's political economy.

As the analysis and conclusion note, opium is not grown only for the relatively high economic returns that farmers can receive; the crop is also grown because it provides access to resources: land, water, housing, and, in some cases, capital. This capital, in turn, supports investments in livelihood diversification and in the legal economy that allow livelihood diversification. Cultivation also takes place in a complex political environment; one where multiple institutions compete and at times coalesce in their bid to gain support from rural constituencies.

Ultimately, the multifunctional role that opium plays in rural livelihoods makes its replacement all the more challenging. However, this report argues—and illustrates with quantified examples—that by understanding how costs and benefits of the opium crop are distributed, it is possible to develop more focused strategies for reducing household dependency on opium poppy as a livelihood strategy. This understanding can generate actions to ensure that policies and programs do not encourage opium poppy either directly or indirectly.



## 2. Methodology

### 2.1 Approach

There has long been an unmet need for a practical methodology for conducting research on livelihoods (including poppy) in chronically insecure environments. Hopefully the critique of existing methodologies and the positive suggestions contained in this report will prompt scholars, academics and policy makers to be more discerning consumers of drugs statistics and the narratives that surround them.

AREU's methodology combines familiarity with the environment, longitudinal research, and the use of high-resolution imagery and analysis at each stage of the research. The AREU methodology places opium poppy cultivation in a broader livelihoods framework, and avoids the disadvantages of a direct-question, closed questionnaire which is a liability when researching sensitive issues in a country like Afghanistan. As security has deteriorated and imagery has been produced at greater resolution and lower cost, AREU has adapted its data collection and maintained access to some of the most insecure parts of the country. This improved approach has yielded nine years of detailed household data and longitudinal crop-mapping data.

The fieldwork described in this report was undertaken in the provinces of Balkh, Helmand, Kandahar and Nangarhar during the harvest and planting seasons of the 2014/15 and 2015/16 growing seasons. The fieldwork was conducted primarily by colleagues from the Organisation of Sustainable Development and Research (OSDR), and builds on a much larger body of research that has been conducted by the authors and OSDR in rural Afghanistan over nearly two decades.

The focus of this inquiry with rural households was on the totality of how they constructed their livelihoods, especially looking at the changes they experienced during the preceding twelve months. Data collection focused on the inputs and returns on individual crops, the different cropping systems that farmers adopted, and the types of non-farm income they had access to. The inquiry attempted to better understand the different sources of income that were available to households. It also aimed to illustrate how a household's decisions about particular crops are not simply a function of price or returns on a single crop—for example, a choice between cultivating wheat or poppy during the first or main cropping season (winter).<sup>5</sup> Rather, these decisions take into account a wider portfolio of livelihood options. They recognise that cultivating a particular first-season crop will not only impact the other crops that might be grown during that season, but can potentially affect crops grown during the second and third seasons as well. It will also affect how household labour is used in the context of on-farm, off-farm and non-farm income opportunities.

This research has been shaped by a number of methodological positions:

- It considers opium poppy as one crop within a wider range of household activities. This approach recognises that simply asking households why they do or do not cultivate opium is insufficient; the complex and interconnected factors that inform household decision-making cannot be distilled into a single answer.
- It avoids asking direct questions about opium. This reduces the risk of households exaggerating the returns on opium as a way to “negotiate” for greater development assistance in return for giving up the crop. Extensive experience with interviewing has shown that where opium poppy is cultivated, respondents typically will include it when recounting the different crops that they grow and sell. Conducting interviews in the field during planting and harvest for first-season crops, including opium poppy, allowed fieldworkers to verify—and, where necessary, challenge—the truth of respondents' answers.

<sup>5</sup> The traditional reference to “winter” and “summer” seasons implies a sequenced, rigid calendar and does not adequately capture the often-overlapping periods in which various long- or short-maturing crops are grown. In fact, “season” can depend on the choice of crops. Therefore, this paper makes reference to “first,” “second” and “third” seasons.



- By focusing its inquiry on household livelihood strategies, it addresses the inherent problems associated with primary data collection when researching an “illegal” or “underground” activity. The pressure to act against opium cultivation and trade has made illicit drugs a more sensitive topic for farmers and other stakeholders than was the case in the 1990s and early 2000s. However, the rural household remains the most accessible unit of analysis; it offers a basis for cross-referencing findings both with other work on rural livelihoods in Afghanistan and with other research on the role of opium production in rural livelihood strategies in Afghanistan and elsewhere.
- It focuses discussions on the direct experience of respondents and their households rather than on a wider geographic area, where answers become increasingly speculative.<sup>6</sup> For this study, individual interviews with farming households were conducted in the field as farmers tended their crops, rather than in the household compound. This avoided attracting attention from others and minimized repeated interruptions. Group discussions with farmers were avoided, as they tend to be dominated by community elites, are inappropriate for discussing sensitive issues, and increasingly represent a security threat in rural Afghanistan, particularly in the South and East.<sup>7</sup>
- It encompasses the diverse socioeconomic, political and environmental terrain that exists both between and within provinces in rural Afghanistan. For example, the research design selected areas in each province where access to water and land differ: from the well irrigated fertile areas with a year-round irrigation supply, typically found near major rivers, to the drier areas with thinner soils, some of which use deep well technology for irrigation. It also identified areas with better infrastructure; urban centres; market opportunities for the sale of cash crops; and the likelihood of finding non-farm income in the form of salaried employment, trade or wage labour. It contrasted areas with these features against the more remote areas with limited trading and employment opportunities.

The objective of undertaking fieldwork in areas with different resource endowments and market opportunities was to fully understand the variance of inputs into crops, and how this impacts cropping patterns, yields and, ultimately, net returns. This approach also helped to avoid the problems associated with presenting those engaged in opium poppy cultivation as homogeneous.

It attempts to counteract the assumption of homogeneity, which has led to the concentration exclusively on those who cultivate opium poppy on their own land. The image of the owner cultivator and the returns on opium accrued by those who farm their own land are the basis for all analysis in UNODC’s annual survey. This image fails to take into account the inequality that exists within rural communities in Afghanistan and the rules and patronage that govern access to resources in rural areas. This shortcoming is particularly problematic in the context of opium production, as it neglects the highly labour-intensive nature of the crop and the symbiosis between those who have land that they cannot cultivate with opium poppy using family labour (the “labour poor”) and those who do not have sufficient land to meet their basic household needs (the “land poor”).

<sup>6</sup> For more on the pitfalls of posing questions beyond the direct experience of respondents, see Swedish Committee for Afghanistan. Swedish Committee for Afghanistan (SCA), *Farming Systems of Nad Ali District, Helmand Province*, in *Agricultural Survey of Afghanistan, Report 15, Peshawar, 1992. p.1*. Retrieved from: <https://goo.gl/T10Pf9> (Accessed last: 17 September 2016).

<sup>7</sup> For additional discussion of the benefits of avoiding group discussions, see Ira Moore Stevens and K. Tarzi, “Economics of Agricultural Production in Helmand Valley, Afghanistan” (Washington, DC: United States Department of the Interior Bureau of Reclamation, 1965), 1; Jonathan Goodhand, “Research in Zones of Violent Conflict” (Manchester: Chronic Poverty Research Centre, 2001 [unpublished]), 13; Frydoon Shairzai, Ghulam Farouq and Richard Scott, “Farm Economic Survey of the Helmand Valley” (Kabul: USAID, 1975 [unpublished]), 13.



Land tenure arrangements in Afghanistan have been shaped by inequitable land holdings, exacerbated by the labour demands of the opium crop itself.<sup>8</sup> Identifying how the costs and returns are distributed on a particular crop on a given unit of land is critical to understanding the processes of socioeconomic differentiation that can lead to further inequality in rural Afghanistan.

- It uses high-resolution imagery and geospatial analysis in a number of different ways. First, the data produced by these techniques helps to identify areas that are most suitable for fieldwork and that offer the desired divergence in access to resources and markets. Second, high-resolution imagery allows the examination of the results of fieldwork in detail, to verify findings and to explore patterns of land settlement, cropping and the expansion of agricultural areas. And finally, geospatial analysis facilitates the extrapolation of research findings over a wide geographic area and the identification of issues for further examination during subsequent rounds of fieldwork. This report offers an example of the use of these methodologies in its presentation of crop analysis for 2008-2016 in a number of the research sites where fieldwork was conducted, and its high-resolution imagery of places of particular interest.

## 2.2 Caveats

Research in Afghanistan is always subject to biases and inaccuracies. This is even more the case in a chronically insecure environment such as that found in Helmand, Kandahar, southern districts of Nangarhar, and even parts of districts west of Mazar-e Sharif in Balkh. In general, the lack of reliable demographic data hinders establishing representative samples, but especially in such insecure areas. Both fieldworkers and respondents have legitimate concerns for their own safety (particularly in rural areas), and it is difficult to provide oversight for data collection in the field. The research methodology described above is designed to address these challenges, but a number of caveats must be noted, particularly given the security environment and the sensitive issues the research examines.

The most important caveat relates to the impact of the conflict on fieldwork. Insecurity limits the geographical coverage of fieldwork (often at short notice) and rules out formal structured interviews in some rural areas. For this study, a focused research design and a core team of experienced local staff allowed fieldwork to proceed in most areas exposed to the ongoing conflict; however, results of the research were inevitably shaped by the prevailing security situation.<sup>9</sup>

Fieldworkers had to be discreet, interviewing individual farmers at work in their fields where there were no bystanders and an outsider's presence would not be conspicuous. Notes were not taken during interviews but were written up after the fieldworker and respondent parted company. While this approach is potentially subject to recall or memory bias, the risk was reduced by the high level of fieldworkers' experience. The less formal and more conversational style of the interviews also reduced the potential for social desirability bias—the tendency of respondents to reply in a manner that will be viewed favourably by others—that has been shown to affect the results of techniques such as polling in chronically insecure areas.<sup>10</sup>

8 For over two decades those with insufficient land but the requisite skills and experience have had preferential access to land in areas where opium poppy is concentrated and have been given a greater share of the opium crop than if they were to farm the same land with staples like wheat. Recently, with the settlement of the former desert areas of Afghanistan, a new land tenure arrangement—“*lekha*”—has emerged. In these areas, sunken costs are particularly high and access to land is governed by patronage and tribal claims; those sharecropping the land pay for all the financial outlays and the landowner receives one-sixth or one-seventh of the final yield.

9 For example, in Nangarhar, fieldwork in the upper part of the Mohmand valley in Achin—in the areas beyond Asadkhel bridge—proved impossible, given the pervasive presence of fighters aligned to Daesh (Islamic State). But despite the dominance of Anti Government Elements (AGE), fieldwork was completed in such challenging places as the upper parts of Khogiani and lower Achin in Nangarhar, as well as in the area north of the Boghra in Helmand.

10 DFID Afghanistan, “Data Quality Assessment of The Asia Foundation Surveys of the Afghan People, 2006-2009” (Unpublished report, September 2010).



While farmers typically have good knowledge of their cropping practices and outputs, they may not always perfectly recall events of the previous year. In an environment where use of counterfeit products is rife and re-used containers are common, non-literate farmers may not even know for certain which inputs they have used; i.e. “large white pills” or “the spray in the green bottle.” They may also under- or overstate crop area or yields, depending on the circumstances and the perceived incentives. For this study, the researchers also had to ensure that units were precisely recorded and analysed, including instances where the same unit name had different meanings.<sup>11</sup>

To complicate matters further, in Helmand, Kandahar and Nangarhar, the Pakistani Rupee (PR) rather than the Afghani is the default currency, and throughout Afghanistan there is a wide variety of weights and measures. And in an analysis of farming systems, it is difficult to precisely apportion inputs to individual crops, especially where those crops—for example, *chars* (hashish) and almond—are intercropped.

This research does not claim to have covered a representative sample of households or communities in any of the four provinces, as this is unattainable in the current environment. Instead, it has drawn on household livelihood trajectories and geospatial data collected over an extended period of time in a number of specific and quite different research sites. By merging such detailed and historical household, local and geospatial data across such diverse areas, it is hoped that this inquiry will produce what R. Yin has referred to as “analytic generalisation,”<sup>12</sup> offering findings that are relevant to other parts of Afghanistan.

11 For example, a seer is seven kilogrammes in Kabul, 14 kilogrammes in Mazar and 1.2 kilogrammes in Nangarhar - but only for opium.

12 Robert K. Yin, *Case Study Research: Design and Methods*, London, Sage, 1994. p, 31. Retrieved from: <https://designstudiesdiscourses.files.wordpress.com/2013/09/yincasestudy.pdf> (Accessed Last: 15 September 2016).



### 3. Why are we mired in the past?

In suggesting that too much emphasis is placed on the search for an agricultural substitute for opium poppy, researchers may be accused of setting up a “straw man”: refuting an argument that was not advanced in the first place. UNODC’s literature on alternative development<sup>13</sup> and other official documents cite the need for a “balanced” approach to opium poppy cultivation in Afghanistan: a combination of efforts that includes alternative development, eradication and law enforcement measures against those involved in the trade.

Nevertheless, the policy environment has remained littered with efforts to find a single crop that can compete for profitability against opium poppy. The list is long: saffron, pomegranate, apricots, cumin, even onions have all been presented as alternatives to opium poppy production at some point during the last two decades. Major programs have also been built on the premise that a single-crop alternative—even one that is often not as profitable—can form the backbone of a strategy as long as coercion not to plant and the threat of crop destruction deter farmers from planting opium poppy in the first place.

The Helmand Food Zone programme, for example, was predicated on the assumption that opium poppy could be replaced with wheat if there was sufficient pressure on farmers not to pursue their profit-maximising tendencies. The pressure came in the form of what was seen by Western observers as a robust pre-planting campaign by the Governor of Helmand and other public officials, informing farmers that they should refrain from poppy cultivation. This was followed by the destruction of the opium crop of some of those who had resisted the campaign. Wheat seed and fertilizer were provided to some—but not all—farmers in the central canal command area of Helmand in the hope that this would provide some compensation, as well as food security, for those who had been prevented from growing poppy. In the event, many landless and land-poor farmers lost access to their sharecropped land in the canal irrigated area, and opium poppy production was relocated to former desert areas to the northwest.<sup>14</sup>

The search for agricultural solutions—either profitable alternatives or simply compensation for the destruction of opium poppy—has been a persistent component of the policy dialogue on drug control in Afghanistan. Equally persistent has been insistence on the need for robust eradication to prevent farmers from planting poppy, compelling them to take up the alternative crops that the government and the international community have intended to make available. What is far less prevalent in development discussions and planning—despite considerable lip service—is a deeper understanding of the portfolio of activities that makes up rural livelihoods in Afghanistan, including the farmers who grow opium poppy.

Therefore it is no surprise that, almost fifteen years after the fall of the Taliban regime, the discussion remains centred on the comparison of financial returns from opium poppy with the returns from other single crops (usually wheat). Surveys that are seen as the cornerstone of the literature on opium production and described by some officials as “the gold standard”<sup>15</sup> on drugs in Afghanistan have continued to compare the gross returns on opium and wheat each year since 2004.<sup>16</sup> These figures are often cited in the media, as well as in the memoirs of senior international officials who have served in Afghanistan.<sup>17</sup>

13 For example UNODC’s socioeconomic analysis released in March 2016 shows a refreshing approach that borrows some of the language of the livelihoods methodology. However, as it still relies on the same data-collection methodology and statistics of past UNODC surveys, it does not make the conceptual leap and remains fenced in by an economic reductionist model.

14 David Mansfield, Alcis and OSDR, *Managing Concurrent and Repeated Risks: Explaining the reductions in opium production in central Helmand between 2008 and 2011*, Kabul, AREU, 2011. Retrieved from: <https://goo.gl/eYCuF0> (Accessed last: 18 September 2016). For a full review of the Helmand Food Zone and its effect see Mansfield, David (2016) *A State Built on Sand: How opium undermined Afghanistan*, Hurst, London.

15 Yury Fedotov, *Opium and Insecurity: How to break the links in Afghanistan*, Vienna, UNODC, September 2010. Retrieved from: <https://goo.gl/Whrgql> (Accessed Last: 16 September 2016).

16 UNODC, MCN, *Afghanistan Opium Survey 2004*, November 2004. P, 1. Retrieved from: <https://goo.gl/03kVnO> (Accessed last: 16 September 2016).

17 The list of officials includes the former commander of ISAF General Stanley McChrystal, the former British Ambassador Sherard Cowper Coles and the past UN Special Representatives to Afghanistan, such as Kai Eide among many others.



If this comparison between wheat and poppy had not achieved such resonance among senior officials and shaped their understanding of opium poppy and rural livelihoods in Afghanistan, would it have left such a lasting impression? If it had not so effectively shaped the narrative of the causes of cultivation, would it have formed the basis of so many journalists' and officials' description of opium production in Afghanistan? If UNODC's statistics on the gross returns on poppy and its economic rationalist model of farmer decision making had not prevailed, might we have moved forward from the repeated calls for replacing poppy with any one of a range of "silver bullet" crops?

Before considering a more empirical account of farming systems in Afghanistan and the role that opium poppy plays in rural livelihoods, it is worth reflecting on the misconceptions concerning those cultivating opium poppy, as seen in UNODC's annual opium poppy survey and the subsequent socioeconomic analyses produced since 2014.<sup>18</sup> These misconceptions are a function of methodology—often a desire for simple answers that make data handling easier—as well as of a narrow focus on drugs data that disconnects opium poppy from the wider socioeconomic, political and environmental conditions in which it is grown.

### 3.1 Price is necessary but not sufficient

Each year since 2006, as part of the village component of its annual opium poppy survey, UNODC has asked a sample of farmers why they cultivate opium poppy.<sup>19</sup> The high price of opium has typically been recorded as the most frequent response to this question, cited by 41 percent of respondents in 2006,<sup>20</sup> 25 percent in 2007,<sup>21</sup> 74 percent in 2008,<sup>22</sup> 61 percent in 2009,<sup>23</sup> 41 percent in 2010,<sup>24</sup> 59 percent in 2011,<sup>25</sup> 44 percent in 2012,<sup>26</sup> 72 percent in 2013,<sup>27</sup> and 44% of those interviewed in 2014.<sup>28</sup> "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, cited by 29 percent and 92 percent of respondents respectively.<sup>29</sup>

In fact, the very high proportion of farmers citing "poverty alleviation" as their reason for cultivating poppy in the 2008 survey seems anomalous; in most years, no more than 20 percent gave this response. On the surface, the high frequency of this response in 2008 could be a function of the particular economic circumstances resulting from a year of lower-than-average

18 Before 2014, UNODC reported the quantitative data on both hectareage and yield with the socioeconomic data they collected from the village component of the annual opium survey. In 2015 they separated these two data sets, releasing the estimates of levels of poppy cultivation in November 2014 and the data from the village survey in March 2015 under a new title: 'socio economic analysis.' The same was done in 2015 and 2016, with the release of the poppy survey in the fall of 2015 and the village data in March of the following year.

19 The 2005 survey also reported the reasons farmers were cultivating opium poppy that year, but the original question asked "the reasons for increasing cultivation of opium poppy". UNODC, MCN, *Afghanistan Opium Survey 2005*, Kabul November 2005, p. 62. Retrieved from: <https://goo.gl/tJVD6c> (Accessed Last: 17 September 2016). rather than the reasons for cultivation per se. Since 2006 the question has remained unchanged.

20 UNODC, MCN, *Afghanistan Opium Survey 2006*, Kabul, October 2006, p. 73. Retrieved from: <https://goo.gl/60XChv> (Accessed last: 17 September 2016).

21 UNODC, MCN, *Afghanistan Opium Survey 2007*, Kabul, October 2007, p. 99. Retrieved from: <https://goo.gl/QVa5x9> (Accessed last: 17 September 2016).

22 UNODC, MCN, *Afghanistan Opium Survey 2008*, Kabul, August 2008, p. 105. Retrieved from: <https://goo.gl/epY1I4> (Accessed last: 17 September 2016).

23 UNODC, MCN, *Afghanistan Opium Survey 2009*, Kabul, September 2009, p. 79. Retrieved from: <https://goo.gl/0QepNO> (Accessed last: 17 September 2016).

24 UNODC, MCN, *Afghanistan Opium Survey 2010*, Kabul, December 2010, p. 62. Retrieved from: <https://goo.gl/9aMUNS> (Accessed last: 17 September 2016).

25 UNODC, MCN, *Afghanistan Opium Survey 2011*, Kabul, December 2011, p. 60. Retrieved from: <https://goo.gl/PsdBNW> (Accessed last: 17 September 2016).

26 UNODC, MCN, *Afghanistan Opium Survey 2012*, Kabul, May 2012, p. 54. Retrieved from: <https://goo.gl/oSTj58> (Accessed last: 17 September 2016).

27 UNODC, MCN, *Afghanistan Opium Survey 2013*, Kabul, December 2013, p. 51. Retrieved from: <https://goo.gl/XwAv5Z> (Accessed last: 17 September 2016).

28 UNODC, MCN, *Afghanistan Opium Survey 2014*, Socio economic analysis March 2015, p. 33. Retrieved from: <https://goo.gl/zC7Y1I> (Accessed last: 17 September 2016).

29 UNODC, *World Drug Report 2008*, Slovakia, June 2008, p. 99-105. Retrieved from: <https://goo.gl/zC7Y1I> (Accessed Last: 18 September 2016).



precipitation in many parts of Afghanistan. However, there has not been a comparable response rate in dry years since then, or in years with other shocks, including chronic violence and conflict, that have had dramatic effects on farmers' welfare.

A closer analysis suggests that the reason for this pronounced uptick in poverty alleviation as a response in 2008 may well be methodological: a consequence of 2008 apparently being the only year when UNODC reported multiple responses for cultivating opium poppy rather than just one. Therefore, while 92 percent of farmers reported that they cultivated opium for reasons of poverty alleviation in 2008, 66 percent referred to "the high price of opium," 50 percent to "the possibility of obtaining a loan," 37 percent to "the high demand for opium," 21 percent because they "needed opium for personal consumption," and 8 percent to being "encouraged by an external influence."<sup>30</sup> (A few other responses were reported in 2008, but far less frequently.)

The 2008 survey also states that multiple responses to the question were recorded in 2007, but the final 2007 report offers percentages for only one answer from each respondent. The discrepancy between the 2007 report and the reference to it in 2008 is striking. The 2008 report stated that in 2007, 85 percent of farmers said they cultivated opium poppy for reasons of "poverty alleviation,"<sup>31</sup> in contrast to the 29 percent actually cited in the 2007 report.<sup>32</sup> Further comparison shows that only 16 percent of farmers claimed that they cultivated opium to obtain a loan in the 2007 survey<sup>33</sup> when only one answer was reported, but the 2008 report, where multiple answers were documented, states that in 2007, 48 percent of farmers interviewed gave this response.

In 2009, the annual opium poppy survey reverted back to reporting only a single response from farmers. From then until the most recent survey in 2014, almost none of the other reasons mentioned so frequently by respondents in 2007 and 2008 surveys were cited by more than 15 percent of those interviewed each year,<sup>34</sup> and the high price of opium returned to its status as by far the most frequent response reported each year, irrespective of whether opium prices had actually risen or fallen.

The difference between the percentages actually reported in the 2007 survey and the percentages attributed to that survey a year later highlights the conceptual and methodological weaknesses of attempting to distil the complex and interconnected factors that inform household decision making into a single answer.<sup>35</sup> At the most basic level, recording and reporting only one response per farmer denies the multifunctional role that opium poppy plays in rural livelihood strategies. Moreover, the responses listed and tabulated by UNODC are not actually mutually exclusive: a farmer may well have several reasons for growing poppy. Recording only one answer, without any contextual background on those responding, also fails to recognize that farmers with different assets may weigh the multiple reasons why they cultivate opium poppy in quite different ways. In addition, to a farmer unfamiliar with survey techniques, the choice of "high sale price of opium", "high income from little land", "to improve living condition", or "poverty" may all mean essentially the same thing.

For example, it is quite possible for a land-poor farmer to cultivate opium poppy as a means of accessing 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 might achieve other outcomes: fulfilling his son's wishes, securing lineage, and possibly establishing familial bonds with a relatively wealthy and influential family. Marriage to a more prosperous family could, in turn, secure access to other assets in the future, including land or non-interest-bearing credit (*qarz-e hasana*). Perhaps it could gain the kind of patronage that

30 UNODC, MCN, *Afghanistan Opium Survey 2008*, Kabul, August 2008, p. 105

31 UNODC, MCN, *Afghanistan Opium Survey 2008*, Kabul, August 2008, p. 105.

32 UNODC, MCN, *Afghanistan Opium Survey 2007*, Kabul, October 2007, p. 99.

33 UNODC, MCN, *Afghanistan Opium Survey 2007*, Kabul, October 2007, p. 90.

34 With the exception of 'high income for little land' in 2012 which was cited by 20 percent of respondents.

35 David Mansfield, *Managing Concurrent and Repeated Risks: Explaining the Reductions in Opium Production in Central Helmand Between 2008 and 2011*, Alcis Ltd& OSDR, August 2011, p.8. Retrieved from: <https://goo.gl/eYCuf0> (Accessed last: 18 September 2016).



might support another son getting a job or ensure the family's protection from an ongoing or potential conflict with a neighbour.

For this particular farmer, the high price of opium would be 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 may have also sold what little residual opium he had 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 be important only in that there might be more land available under sharecropping arrangements that year, particularly from the influential landowners in the village. These landowners are likely to have 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 and skill in cultivating opium poppy would increase the probability of his accessing this land and benefiting from the landlord's relationship with local powerbrokers, with a greater probability of obtaining a yield than other farmers who had not built these kind of alliances.

In this context, "high price of opium" may be shorthand for "it works," but its importance would be minimal compared to the other economic and social assets that opium ensured. And the farmer might not have even mentioned some of these other assets 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.

In conclusion, both the approach and the findings reported by UNODC as to the reasons that farmers cultivate opium poppy are problematic. Reducing the myriad factors that inform poppy cultivation to a single response is misleading. 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. It neglects both the complex political environment in which opium poppy cultivation takes place, and the multiple and often competing institutional interests that are at play. And finally, distilling the reasons for cultivation into a single response ignores the multiple roles that opium poppy plays in rural livelihoods and how these roles vary across different socioeconomic groups and locations.

### 3.2 Direct questions can yield ambiguous answers

Beyond the conceptual problems associated with recording and reporting only a single answer to a question on the reasons for opium poppy cultivation, there is another factor that can affect research in this setting: the challenge of asking farmers direct questions about an illegal activity. A direct line of inquiry raises concerns over how security issues and the presence of armed actors (state, insurgents and others) impact the selection of respondents and the answers those respondents offer. There is great potential for those conducting the survey to be biased in favour of more secure, peri-urban areas; there is also a high likelihood that direct questions will foster social desirability bias on the part of respondents—the inclination to answer questions in a way that the respondents think will be viewed positively by others.<sup>36</sup>

While it can be argued that these challenges affect any fieldwork in Afghanistan, they are particularly salient when researchers are tasked with asking direct questions on sensitive issues and consequently do not gather the contextual data on what shapes the decisions of farmers. Understanding the broader context could provide a basis for recasting the conversation to make it less threatening and could yield more accurate information to verify findings.

<sup>36</sup> Pinney, A. (2010). DFID Afghanistan Data Quality Assessment of the Asia Foundation Surveys of the Afghan People 2006-2009, September 2010. Unpublished report.



### 3.3 Gross returns present a misleading picture

The economic returns from opium are typically presented as gross returns and are compared with the gross returns from wheat. The data for this comparison is calculated by multiplying the price by the average yield for each crop. The use of gross returns presents several problems.

These estimates ignore the by-products associated with each crop as well as the considerable differences in input costs of cultivating opium poppy, an input-intensive crop, and wheat, a crop that is typically grown using only family labour. A further problem is that opium and wheat are presented as the only alternatives to each other, disregarding the existence of many other cropping options. And the two crops are often treated as mutually exclusive when, in fact, opium poppy and wheat are often grown on the same land over time as part of sensible crop rotation practices.

*Figure 1: Young men collecting opium poppy capsules in Khogiani, Nangarhar, April 2016*



Both opium and wheat have by-products that can be either sold or used by the household. In the case of opium, there are two by-products: poppy straw and seed (see Figures 1 and 2). Neither of these is included in UNODC's calculations of gross returns to opium poppy cultivation.<sup>37</sup>

**Poppy straw** is typically used as fuel for households, representing a saving on the purchase of firewood, or on time spent gathering alternative fuels. It is estimated that a *jerib* (one-fifth of a hectare) of opium poppy can provide fuel for a household for around six weeks, saving the average household as much as US\$1 per day.<sup>38</sup> The straw can also be sold on the open market, generating income for the household.<sup>39</sup>

<sup>37</sup> From 2010 to 2013, UNODC reported net returns—rather than gross returns—in the annual survey, but the methodology has proven inconsistent and confused. In 2010, the survey first added a calculation of indicative net returns on opium, estimating that the net income on opium poppy was US\$2,900 per hectare, compared to a gross return of US\$4,900. In this case, the net income was derived from farmers' estimates that on average 41 percent of the gross income from opium poppy was spent on inputs. In the same report, the gross income on wheat was calculated on the basis of the estimates of "village headmen," while the costs of inputs were based on the estimates of fieldworkers (UNODC 2010:76-77). In 2011, estimates of net returns on poppy took a different path after farmers estimated that the costs of inputs made up only 13 percent of their gross returns, according to UNODC—a lower proportion than was calculated in past years. At the time, UNODC did not report against this figure but instead used a net income of US\$6,400 per hectare, or 40 percent, based on their own surveyors' estimates (UNODC 2011: 73). However, in the 2012 report, UNODC reverted back to the 13 percent estimate for 2011 and reported a net return of US\$9,300 per hectare for opium poppy. They compared it to a net return of US\$3,300 per hectare in 2012, with inputs costs as a 28 percent "share of gross income."

<sup>38</sup> David Mansfield, *Governance, Security and Economic Growth: The Determinants of Opium Poppy Cultivation in the Districts of Jurm and Baharak in Badakhshan*, A Report for the Aga Khan Development Network, February 2007 p.20. Retrieved from: <https://goo.gl/29QOTP> (Accessed last: 18 September 2016).

<sup>39</sup> Opium poppy straw can be sold by the bag, known as a *bar*, which is the equivalent of twelve *kabuli seer* (84 kilogrammes). In the South it is estimated that one *jerib* can produce ten to fifteen *bar* of opium straw. In the province of Badakhshan the yield of poppy straw is lower, at around 400 kilogrammes per *jerib* (USAID, Alternative Development Program for North East Afghanistan (ADP/N), George M. Johnston and Jeffrey J. Povolny, *Economic Analysis of Net Returns to Opium Poppy, Wheat and Vegetables, Badakhshan 2007*, USAID, January 2008, p.18. Retrieved from: <https://goo.gl/CD2C3w> (Accessed last: 19 September 2016).



**Poppy seed** can also be either used or sold.<sup>40</sup> It can be processed into cooking oil by small household presses, with the resultant waste, known as *khunjara*, fed to livestock, a tradition more common in the North and Northeast. An alternative is to sell poppy seed to local traders<sup>41</sup> who sell it on to larger traders in the district bazaars and provincial centres; these larger traders then transport the seed to Pakistan<sup>42</sup> for production into edible oils.<sup>43</sup> Given the amount of poppy seed produced each year and the small amounts of seed required for planting, there is a significant amount of seed available for sale or use.<sup>44</sup> In fact, as late as 2005, poppy seed was still a legal export and listed in official statistics.

Figure 2: Opium poppy harvest in Khogiani, Nangarhar, April 2016.



With regard to the by-products of wheat cultivation, Maletta stated in his detailed assessment of Afghan wheat production that “any attempt to analyze the wheat crop as an activity conducive only to the production of grain would be deeply flawed.”<sup>45</sup> In practice, wheat straw plays an important role in the household economy. 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 both livestock and their products such as *ghee* (clarified butter), *qorut* (dried cream) and wool, thereby generating further economic value for the household. In turn, livestock manure is used as a fertilizer to improve the fertility of the land 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.<sup>46</sup>

40 In the South, opium poppy seed currently sells for around US\$2.91 (300 PR) per *maun*. A *maun* is a unit of weight equivalent to 4.5 kilogrammes.

41 In 2008 and 2009 there was a spate of very large seizures of poppy seed by ISAF. These were typically made in the bazaars of Helmand and Kandahar. The first seizure was made in Gereshk bazaar in November 2008; it was estimated at 18 metric tons of seed and was found in the ‘new bazaar’ stored amongst maize, mung bean and other dry crops.

42 In 2005, 976 metric tons of poppy seed were exported, down from 3,198 metric tons in 2003/04 Central Statistics Office, *Afghanistan Statistical Year Book, External trade 2008-2009, January 2009*, p.205. Retrieved from: <https://goo.gl/wdz5uD> (Accessed last: 19 September 2016).

43 Mohamed Ahmad ‘Reducing edible oil imports’ Dawn 24 November 2008. (No traceability)

44 In the South, one hectare of poppy produces an estimated 60 to 75 *maun* of seed (the equivalent of 270 to 337.5 kilogrammes) which in 2009 sold for US\$3.57 (300 PR) per *maun*. Farmers estimate that around 2.5 to 5 *maun* (the equivalent of 11.25 to 22.5 kilogrammes) of seed is required to cultivate one hectare of opium. This leaves a residue of seed of 55 to 72.5 *maun* per hectare cultivated (the equivalent of 247.5 to 326.25 kilogrammes). 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 tons of poppy seed available for sale.

45 Maletta, Hector, (2004) ‘The Grain and the Chaff: Crop residues and the cost of production of wheat in Afghanistan in a farming system perspective’ Unpublished Paper

46 Maletta, Hector, (2004) Ibid.



The yield of wheat straw is so high that a given unit of land has the potential to yield wheat straw that amounts to twice the weight of the wheat itself.<sup>47</sup> The straw can also be sold on the open market; prices vary depending on availability and season, but in the North during the winter, the selling price of wheat straw can equal that of wheat grain.<sup>48</sup> Consequently, failure to account for the value of wheat straw can result in gross returns on wheat being significantly undervalued.

There is an even more critical problem with the comparison of the economic returns from wheat and opium poppy: it does not reflect the substantial differences in input *costs* associated with the two crops. This is particularly problematic given the input-intensive nature of opium production. Farmers will, for example, incur higher costs in preparing the land for opium production than for wheat. Poppy requires more fertilizer per unit of land, and may also require irrigation water, compelling farmers to buy diesel for a tubewell or hire the use of a pump. Furthermore, while both opium and wheat (and all other 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.

*Figure 3: Young girls collecting opium capsules in Khogiani, Nangarhar, April 2016*



Most important is the stark difference in labour requirements between opium and wheat, with opium requiring an estimated 360 person-days per hectare<sup>49</sup> compared to an average of only 31 person-days for rain-fed wheat and 64 days for irrigated wheat.<sup>50</sup>

47 Maletta, Hector, (2004) 'The Grain and the Chaff: Crop residues and the cost of production of wheat in Afghanistan in a farming system perspective' Unpublished Paper, page 13

48 George M. Johnston and Jeffrey J. Povolny, *Economic Analysis of Net Returns to Opium Poppy, Wheat and Vegetables, Badakhshan*, USAID ADP.N, PADCO, January 2008, p.21. Retrieved from: <https://goo.gl/CD2C3w> (Last accessed: 20 September 2016)

49 David Mansfield and Adam Pain, *Counter Narcotics in Afghanistan: The Failure of Success?* Kabul: Afghanistan Research and Evaluation Unit, December 2008, p. 16. Retrieved from: <https://goo.gl/vJVCZ5> (Accessed last: 19 September 2016).

50 Hector Maletta, *FOOD AND AGRICULTURE IN AFGHANISTAN: A LONG TERM OUTLOOK*, February 2004, p.28. Retrieved from: <https://goo.gl/EFvnrs> (Accessed last: 19 September 2016). estimates vary by region, and he argues that in the South only 55 person-days are required for irrigated wheat due to widespread tractor use, compared to 75 person-days in the central region around Kabul.



While wheat can be largely grown using household labour,<sup>51</sup> opium cannot, leading to most households having to hire **what can be rather** costly labour during the harvest season.<sup>52</sup> In 2013, in areas such as Bakwa in Farah and Khanishin in Helmand, daily wage rates for such labour reached as high as US\$12 per person-day, often absorbing one-fifth to one quarter of the final yield.<sup>53</sup>

Farmers have pursued a number of strategies to minimise the need for hired labour for opium poppy cultivation, including staggered planting; cultivating different varieties of opium poppy with different maturation periods; engaging in reciprocal labour arrangements with other households; and maximizing the use of household labour, including women and children (see Figure 3). Wealthier households have been found to prefer to recruit labour under sharecropping arrangements or to offer advance payments on the future opium crop as a way of increasing their returns; these strategies are obviously not accessible to farmers with limited land and capital.

The high value of the by-products of wheat and the high costs of inputs for opium production mean that, with the right constellation of prices, the net returns on wheat can be comparable to those on opium poppy, as occurred in 2008.<sup>54</sup> Prior to 2008, wheat was estimated to have generated higher net returns than opium poppy in a number of districts in the southern region of Afghanistan in 1994, 1997 and 1999.<sup>55</sup> 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 are currently.

### 3.4 Not all farmers are the same

A further issue with the data on and analysis of the economic returns from opium poppy and wheat is its disregard for the different benefits of opium poppy cultivation in different settings and to different types of households. UNODC typically reports gross returns per hectare, derived by multiplying the average yield by the average farm-gate price at harvest time. They then subtract the costs of production, as reported by farmers, 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.)<sup>56</sup>

As discussed above, net returns will vary depending on the inputs and the outputs (including the by-products) of the final crop. Both inputs and outputs will differ by terrain, even over short distances. For example, in central Helmand, yields vary significantly between the canal command area and the former desert areas just north of the Boghra canal. In the recent past, wheat yields were 60 to 80 *maun* per *jerib* in the former desert areas, compared to 200 to 220 per *jerib* in the irrigated canal command area. Consecutive years of low opium yields have now prompted farmers to make greater investments in their wheat in the area north of the Boghra canal. This

51 In fact, few farmers produce so much wheat that they have to use hired help: most farmers produce relatively small outputs that can be harvested by family labour (Maletta, Hector, (2004) 'The Grain and the Chaff: Crop residues and the cost of production of wheat in Afghanistan in a farming system perspective' Unpublished Paper, p. 48). (Unpublished paper).

52 David Mansfield, *Coping Strategies, Accumulated Wealth and Shifting Markets: The Story of Opium Poppy Cultivation in Badakhshan 2000-2003*, A Report for the Aga Khan Development Network, January 2004, p.8. Retrieved from: <https://goo.gl/PsgB1Z> (Accessed last: 19 September 2016).

53 Fieldwork in 1998 reported that 70% of those interviewed in the districts of Maiwand, Ghorak and Khakrez in the province of Kandahar and in Shinwar district in Nangarhar hired labour during the opium harvest (cited in Strategic Study #4: Access to Labour: The role of opium in the livelihood strategies of itinerant harvesters working in Helmand Province, Afghanistan by David Mansfield, June 1999. Fieldwork in Nangarhar in 2004 revealed that 80% of those interviewed reported that they hired labour during periods of peak agricultural activity, of which 96% hired labour to work on opium poppy. See David Mansfield, *Diversity and Dilemma: Understanding Rural Livelihoods and Addressing the Causes of Opium Poppy Cultivation in Nangarhar and Laghman, Eastern Afghanistan*, PAL Internal Document No. 2, December 2004, p.8. Retrieved from: <https://goo.gl/o1rFns> (Accessed last: 19 September 2016).

54 Mansfield, David (2009) *Sustaining the Decline?: Understanding the Nature of Change in the Rural Livelihoods of Opium Poppy Growing Households in the 2008/09 Growing Season*. A Report for the Afghan Drugs Inter Departmental Unit of the UK Government, page 48.

55 See UNDCP (1997) *Afghanistan: Assessment Strategy and Programming Mission to Afghanistan*, May-July 1995; and UNDCP, *Afghanistan Annual Opium Poppy Survey 1997* (Islamabad, UNDCP, page 11) cited in Mansfield, David 2002 "The Economic Superiority of Illicit Drug Production: Myth and Reality - Opium Poppy Cultivation in Afghanistan" Paper prepared for the International Conference on Alternative Development in Drug Control and Cooperation, Feldafing (January 7-12).

56 UNODC, MCN, *Afghanistan Opium Poppy Survey 2012*, Kabul, April 2013, p. 62.



has resulted in yields of up to 150 *maun* of wheat per *jerib*, significantly narrowing the gap between the two areas.

Large variations can also be seen in inputs, particularly in drier areas where farmers are more reliant on tubewells for irrigation. The fixed costs associated with tubewell irrigation are high; a typical diesel-powered tubewell costs around US\$1,700 to install for an area of between 15 and 20 *jeribs*, while annual capital depletion costs are US\$33 per *jerib*. There is a further US\$50 per *jerib* in recurrent costs for diesel, which can increase considerably with the fluctuation in diesel prices. The initial capital costs for a solar-powered tubewell are significantly higher (US\$4,985) for the same 15 to 20 *jeribs* of land, but with solar power, capital depletion costs are only US\$24 per *jerib*, and no diesel is required. In the canal command area, farmers need to provide a payment of only one-to-two *maun* of wheat and the same amount of maize per *jerib* of land cultivated, making the cost of irrigation significantly lower than in the former desert areas.

Clearly there are variations in yields between provinces due to differences in climate, soils, varieties of crops, and the availability of irrigation. However, agricultural practices also differ. For example, herbicides are commonly used on opium poppy in Helmand and Kandahar while not used at all in Balkh and Nangarhar. All of these variations impact net returns, but UNODC does not take them into consideration in calculating the gross returns on opium.

Most importantly, net returns vary by socioeconomic group, which is primarily defined by a household's access to land. Different land tenure arrangements determine which input costs farmers incur and what proportion of the final yields they obtain. These arrangements are a function not only of whether a farmer owns land but also of whether he has the capital to purchase inputs.

For example, there are multiple forms of sharecropping. Some arrangements might require the farmer to pay for 50 percent of all the costs of production in exchange for 50 percent of the final yield. Farmers with less capital may agree to an arrangement where they are not required to meet any of the costs of production but will receive only 25 per cent of the final crop. Recently a new form of sharecropping known as "*lekha*" has arisen in the former desert areas, where the farmer pays all of the costs of production (except the installation of the tubewell) but receives five-sixths or six-sevenths of the final crop. There are several possible reasons for the appearance of this new arrangement; it may be a function of the liquidity of farmers, a way for landlords to reduce the risk they are exposed to in an area that experiences regular crop failure, or a way for large landowners to get others to invest in the improvement of their land while retaining ownership over it.

It is clear that the variation in yields, inputs and land tenure arrangements all have a significant impact on the net returns farmers derive from the crops they grow, particularly opium poppy. Estimates of the gross (or even net) returns on opium poppy fail to capture the on-farm income that different socioeconomic groups actually derive from the sale of opium; they also ignore the different functions that opium plays in the wider household economy.

For instance, for the sharecropper in a former desert area, opium provides both an on-farm income with which to purchase food and also a place to live—something he may have lost access to when opium was banned in the canal command area and landowners moved to crops that they could manage with their own family labour. For the sharecropper, opium may be the only crop valuable enough to cover the costs of establishing and running a tubewell. He may use it to cross-subsidise the production of food crops, such as wheat, and a small amount of summer vegetables. And it can provide drinking water for his household and livestock.

None of these in-kind benefits are included in purely financial calculations of the returns on opium poppy, but they are just as important in determining levels of cultivation as the on-farm income that farmers expect to earn from opium production.



### 3.5 Comparing apples and oranges

Comparing the economic returns on opium and wheat brings to mind a common expression in English: comparing apples and oranges—two fruits whose colour, taste, texture and preparation are totally different. Aside from the above omissions and errors in the calculation of the economic returns from opium poppy and wheat, it is important to recognize the very different roles these two crops play in the household economy and how these roles impact the allocation of both labour and land. Maletta<sup>57</sup> has pointed out that small landholdings, low yields and high population densities in Afghanistan preclude the majority of farmers from achieving—let alone surpassing—self-sufficiency in wheat or 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 that the comparison of the gross returns—or even the net returns—from the two crops is misleading.

For farmers without a significant surplus (that is, 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 the reliability of 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.<sup>58</sup>

For farmers who own sufficient land to meet family food requirements, possibly with some extra land for a potential surplus, an increase in wheat prices may result in an increase in wheat production. However, this will largely be at the margin, where households may forgo some of the land that they had cultivated with cash crops (including opium poppy) the previous year to produce extra wheat for family consumption.<sup>59</sup> 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 and secure a supply of a staple food.<sup>60</sup>

The vast majority of Afghan farmers, however, have small landholdings and large numbers of household members. This means that they cannot meet their household food requirements even if they allocate all of their land to wheat. As net buyers of wheat, these farmers will always have 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 who do not own any land and can gain access to land only through sharecropping or tenancy, an increase in the wheat price may force them off the land altogether. In this case, landowners may look to ensure their own food security by substituting wheat for opium poppy; the lower labour inputs required for wheat production<sup>61</sup> may then no longer require the sharecroppers or tenant farmers who were so necessary for the production of poppy.

57 Maletta, Hector, (2004) 'The Grain and the Chaff: Crop residues and the cost of production of wheat in Afghanistan in a farming system perspective' Unpublished Paper, page 4.

58 Mansfield, David (2009) Sustaining the Decline?: Understanding the Nature of Change in the Rural Livelihoods of Opium Poppy Growing Households in the 2008/09 Growing Season. A Report for the Afghan Drugs Inter Departmental Unit of the UK Government; Mansfield, D., Alcis Ltd., and OSDR. (2011a, September). David Mansfield, *Managing concurrent and repeated risks: Explaining the reductions in opium production in Central Helmand between 2008 - 2011*, Alcis Ltd., and OSDR, August 2011. Retrieved from: <https://goo.gl/eYCuF0> (Accessed last: 19 September 2016).

59 David Mansfield, *Managing concurrent and repeated risks: Explaining the reductions in opium production in Central Helmand between 2008 - 2011*, Alcis Ltd., and OSDR., August 2011. Retrieved from: <https://goo.gl/eYCuF0> (Accessed last: 19 September 2016).

60 United Nations Drug Control Programme (1995) Afghanistan: Assessment Strategy and Programming Mission to Afghanistan, May - July 1995.

61 Moreover, if a sizable number of landowners are prevented from having opium poppy cultivated on their land (i.e. by an effective opium ban), they will manage to make ends meet cultivating wheat, but in the process they will eject sharecroppers who had been cultivating opium poppy on their land and instead engage in wheat cultivation entirely or largely with household labour.



These varying responses to an increase in the price of wheat from farmers with quite different landholdings reflect the inadequacy of the conventional comparison of economic returns on opium and wheat. Such a comparison portrays a far too simplified model of farmers choosing between two crops grown with quite different functions and inputs. It portrays farmers as economic actors whose only objective is to maximise their income, and it projects an image of a homogeneous, landed population, shaped by the same aspirations and preferences. It assumes that they can respond to shifts in prices by simply reallocating inputs from one activity to another. Such an assumption 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 first growing season (winter) alongside opium poppy and wheat, but they rarely figure in comparisons with opium poppy. Depending on the province and locality, these crops may include onion, spring onion, garlic, clover, spinach and squash. There are also crops that are planted in the second growing season, such as watermelon, other melons, cotton, eggplant, cucumber, tomato, pea, green bean and okra. All of these compete with opium poppy for household land and labour, but only between February/March and May when opium is harvested, and not for the entire first and second growing seasons.

Estimates have often shown potentially favourable net returns on these cash crops. For example, research in Nangarhar in 2006 showed higher net returns for *gandana* (a type of leek), onion, okra, potato, squash and tomato than for opium poppy.<sup>62</sup> In Badakhshan, Johnson and Polovny<sup>63</sup> 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 concurrently on the same land as a way of managing pests, labour inputs, and risks of crop failure, it remains unclear why we are still presented with a comparison only 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 by giving an impression that the primary alternative to opium poppy is wheat. Nothing could be further from the truth.

62 David Mansfield, *Exploring the 'Shades of Grey': An Assessment of the Factors Influencing Decisions to Cultivate Opium Poppy in 2005/06*, A Report for the Afghan Drugs Inter Departmental Unit of the UK Government, 2006, p.22. Retrieved from: <https://goo.gl/pbk0pY> (Accessed last: 20 September 2016).

63 George M. Johnston and Jeffrey J. Povolny, *Economic Analysis of Net Returns to Opium Poppy, Wheat and Vegetables, Badakhshan 2007*, USAID, January 2008, p.21. Retrieved from: <https://goo.gl/CD2C3w> (Accessed last: 20 September 2016).



## 4. Examining the economics of crops, cropping systems and livelihoods

To counter the current narrative on opium production and the methodologies on which that narrative is based, this report draws on data collected over the last two growing seasons in Balkh, Helmand, Kandahar and Nangarhar. It shows how net economic returns vary across a variety of crops and among different socioeconomic groups. These variations are a function of differences in climate, precipitation, crop varieties, agricultural practices and household resource endowments, especially the varied access to land and other assets.

In some instances the data in this study has been generalised to make it more manageable, but fieldwork was designed to, wherever possible, identify variations and explore the reasons that they exist. Although it was not possible conceptually or practically to completely isolate the use and contributions of inputs which are used jointly in the production of more than one crop, the study was able to account for many important differences.

This was clearly seen in Helmand Province, where fieldwork produced data that distinguished the areas irrigated by the Helmand River and Boghra Canal from farms located in the former desert areas of the South Western region,<sup>64</sup> capturing the variance in production costs and yields between those very different zones. The data reflected the dramatic uptake of new technology in the former desert areas and, within that region, differentiated between crops grown using diesel-powered tubewells and those grown with solar-powered ones. These differences have potential implications for future production and rates of settlement.

In some cases the data is standardized so as to make it more manageable. For example, although payments to the *mirab* (the person who manages common water resources) and to the *mullah* (for his services to the community) may actually differ from area to area, for the sake of analysis they have been standardised within each province.<sup>65</sup> In fact, in Helmand farmers' payments to the *mullah* were the same north and south of the canal, at no more than five percent of the final yield, despite the common belief that farmers paid ten percent in canal-irrigated areas and only five per cent in the former desert areas. Similarly, fieldwork found that payments to the Taliban were relatively uniform on both sides of the Boghra canal at two *khord* (one *khord* equals 112.5 grams) per *jerib* for opium and US\$2.91 (300 PR) per *jerib* of wheat.<sup>66</sup>

In subsequent parts of this section, data on net returns from individual crops is used to examine the total net returns from different cropping systems (4.4) and from overall (farm and off-farm) livelihood portfolios (4.5). These findings are particularly important because they reflect the role that opium poppy plays within the wider socioeconomic, political and environmental conditions in which it is grown. They also cast a light on the choices that farmers face when deciding how best to allocate household assets—their natural capital (land and water); their human capital (labour, skilled and unskilled); and their financial capital—when investing in a tubewell or purchasing diesel, fertilizer, and other inputs.

It is important to note that this analysis is a “first cut” or “snapshot,” capturing conditions within a particular time frame. The prices of agricultural crops change over time, and yields vary (as occurred with the failure of the poppy crop in the South West between 2012 and 2015). The adoption of new agricultural practices can also affect prices. New crops and even cropping seasons can be seen as farmers experiment with varieties that are grown at different points in the calendar year. Innovations such as cultivating crops under “plastic” in polytunnels and

64 David Mansfield and Paul Fishstein, *MOVING WITH THE TIMES: HOW OPIUM POPPY CULTIVATION HAS ADAPTED TO THE CHANGING ENVIRONMENT IN AFGHANISTAN*, Kabul, AREU, June 2016, p.16-17. Retrieved from: <https://goo.gl/YhXZfF> (Accessed last: 20 September 2016).

65 David Mansfield, *From Bad They Made It Worse: The concentration of opium poppy in areas of conflict in the provinces of Helmand and Nangarhar*, Kabul, AREU, June 2014, pp.20, 85-86. Retrieved from: <https://goo.gl/8auWZk> (Accessed last: 20 September 2016).

66 It is unknown if *pro forma* payments will also be imposed now that the Taliban has penetrated deeper into the canal command area. [AB]: Unclear. How would this differ from current payments?



greenhouses have also allowed farmers to vary planting times so as to exploit seasonal price fluctuations and get higher prices for their crops. Farmers in parts of Nangarhar have become adept in planting crops like tomatoes, onions and short-season crops like coriander, cabbage and lettuce more than once per year as a way of increasing their income.

For the above reasons, the tables below should not be seen as comprehensive and fixed, but rather as a major step towards a more informed analysis of the returns on crops, cropping systems and livelihoods that can be developed as the rural economy and our understanding of it evolve.

#### 4.1 Net returns on individual crops<sup>67</sup>

The data in Table 1 illustrates a wide array of crops that farmers grow in the four provinces where fieldwork was conducted, and the estimated net returns earned on each in the 2015/16 agricultural year. The table is not an exhaustive list. Many other crops were grown, but by such a small number of respondents that it was not possible to collect sufficient data on inputs and yields to be confident of the result—especially in light of variations in land quality, resources, and cultivation practices between even nearby farms. The excluded crops, however, make up a very small part of the overall livelihoods picture. (A more extensive list of crops for the four provinces—along with gross and net revenue, input costs and estimated net returns—is provided as a summary in Annex A, and at a more detailed level in Annexes B1-B4).

The sheer number of crops grown in the areas studied illustrates how diverse cropping systems in Afghanistan have become over the last decade. Farmers in Nangarhar had the most varied agriculture of the four provinces, with over 20 different crops cultivated. This diversification reflected relatively favourable land, water and other natural resources, as well as the proximity to urban markets in Kabul and Peshawar.

The wide variety of crops grown allowed farmers to cultivate the same crop during different seasons. For example, spring and summer varieties of tomato and summer and late-summer varieties of maize were grown in Nangarhar, and spring and summer varieties of cotton, melon and watermelon in Helmand. Table 1 presents the gross and net income derived from these crops.

<sup>67</sup> The analysis in this section is based on the crop-level calculations for each province presented in Annexes B1-B4.



Table 1: Estimated gross and net returns per jerib for selected crops, 2015/16 agricultural year

All amounts in USD

CROP	Gross returns				Net returns, using household labour				Net returns, using hired labour			
	Balkh	Helmand	Kandahar	Nangarhar	Balkh	Helmand	Kandahar	Nangarhar	Balkh	Helmand	Kandahar	Nangarhar
Winter												
Poppy	1,329	1,408	1,749	1,490	1,142	1,125	1,499	1,220	924	805	1,100	748
Poppy (dasht, diesel)	-	1,335	1,291	-	-	926	955	-	-	606	634	-
Poppy (dasht, solar)	-	1,335	1,681	-	-	999	1,283	-	-	679	885	-
Wheat	278	342	313	291	168	228	213	204	156	218	198	184
Melon	579	584	244	340	479	427	244	202	448	427	244	202
Watermelon	713	1,214	1,214	612	617	1,007	1,058	463	493	1,007	1,058	420
Tomato	338	272	243	350	284	157	121	198	266	118	90	198
Okra	515	-	336	816	464	-	336	620	405	-	336	552
Cucumber	265	73	413	-	163	-64	278	-	163	-64	278	-
Cauliflower	313	427	340	447	223	272	190	323	200	253	170	323
Onion	600	874	1,031	746	496	718	936	595	452	699	919	564
Spinach	-	175	-	-	-	109	-	-	-	109	-	-
Cotton	662	473	-	-	590	364	-	-	499	323	-	-
Gardens												
Grapes	1,194	1,359	3,544	-	965	1,161	3,252	-	862	1,102	3,191	-
Pomegranate	1,801	-	1,189	-	1,744	-	1,108	-	1,672	-	1,061	-



CROP	Gross returns				Net returns, using household labour				Net returns, using hired labour			
	Balkh	Helmand	Kandahar	Nangarhar	Balkh	Helmand	Kandahar	Nangarhar	Balkh	Helmand	Kandahar	Nangarhar
Almond	4,118	-	-	-	4,077	-	-	-	4,077	-	-	-
Summer												
Poppy	-	1,117	-	-	-	754	-	-	-	443	-	-
Maize	149	192	165	155	96	107	101	89	44	107	101	89
Mongbean	136	211	89	131	75	152	30	87	62	152	21	87
Basil	-	476	288	-	-	377	267	-	-	361	252	-
Tomato	338	272	243	350	284	157	121	198	266	118	90	198
Gandana	-	-	-	-	-	-	-	-	na	-	-	-
Cotton	273	291	-	206	136	192	-	110	74	174	-	110

Table notes: As noted in the text, not all crops grown in each province are included. For convenience, "seasons" are used as a reference, although as noted in footnote 5 there is overlap between the seasons. Details on calculations are presented in Annex A and in Annexes B1-B4.



In addition to the crops featured in Table 1, diversification and experimentation by farmers includes the move to three opium poppy crops per year in the upper areas of Helmand, particularly in Musa Qala and Nawzad, in areas irrigated by both the river and the underground water systems known as *karez*<sup>68</sup> (see Figure 4). This is a relatively recent phenomenon. Reports suggest that the practice was introduced in 2014 in the cooler areas of upper Helmand, although there are now reports of farmers experimenting with a summer crop in lower areas like Babaji, and even in the former desert areas north of the Boghra. It is difficult to determine the extent and success of this practice in the former desert areas, where high summer temperatures are likely to affect plant growth and subsequent yields. However, UNODC reports occurrences in Uruzgan, in the upper areas of Kandahar, and even in isolated instances in Balkh.

Figure 4: Second opium crop in Nawzad, Helmand, July 2016



It is important to note that it is not possible to grow three seasons of opium on the same land in a given year. In fact, the second opium poppy crop cuts across the season for the first crop, so that what the media refers to as a “summer crop” is a second crop planted in April and harvested in July. Farmers report that this second crop takes 70 days to mature (as compared with 120 days for the main winter crop) and requires irrigation every day due to the hot weather during its growing period. Where there is not sufficient canal/river water, tubewells are used, further raising the costs of production.

Farmers also use significantly more Diammonium Phosphate (DAP) for the second crop than they do for the first, applying five or six bags per *jerib*, which also raises the costs of production. Neither urea nor herbicide is used on the second crop; weeding is done by hand at a cost of US 4.85 (500 PR) per day in the 2016 growing season. Like the first crop, the harvest of the second crop is organized “by share,” with hired labourers receiving between one-seventh and one quarter of the crop. The third crop is planted in July and harvested in September. Reports indicate that the 2015/16 yields were around one *maun* per *jerib*.

<sup>68</sup> Karez irrigation is a traditional system of underground canals that tap aquifers through a series of subsurface tunnels.



## 4.2 Costs and price matter

The comparison of net returns on the different crops in Table 1 shows that in 2016, opium poppy was a relatively profitable crop in each season it was grown. It generated higher net returns than most other crops, with the exception of certain perennial horticultural crops such as almond in Balkh, pomegranate in Kandahar, grapes in Helmand and Kandahar, and watermelon in Helmand.

However, 2015/16 was seen by farmers as a relatively good year for opium poppy. Prices were high and, after several years of low yields, yields in the south had largely recovered to levels that had not been seen since 2011. For those cultivating opium poppy in the former desert areas using diesel-powered tubewells, there had also been a reduction in the price of diesel, down from US\$1.19 (120 PR) per litre in 2014 to US\$.64 (65 PR) per litre in 2015. It was reported that this rise in the cost of diesel in 2013 had prompted many farmers to turn to solar-powered technology in the 2015/16 growing season (see Figure 5).

Looking back at 2013/14, when low opium yields (less than 0.5 *maun* per *jerib*) were combined with high diesel costs, net returns on opium were dramatically lower in both the canal command area of Helmand and the former desert areas north of the canal (see Table 2). As shown below, net returns could even be negative, especially for households that needed to hire labour for weeding and harvesting.

*Table 2: Comparison of estimated opium poppy returns per jerib in canal area and former dasht, Helmand, 2013/14 and 2015/16.*

*All amounts in USD*

	2013-14		2015-16	
	Canal	Dasht	Canal	Dasht
Diesel price, per litre	-	1.16	-	0.63
Diesel cost, per jerib	-	92	-	50
Opium sale price, per maun	631	631	631	631
Opium yield, maun per jerib	0.45	0.45	2.00	2.00
Gross returns, per jerib, gum only	284	284	1,262	1,262
Gross returns, per jerib, all outputs	430	357	1,408	1,335
Input costs with HH labour, per jerib	229	397	283	408
Input costs with hired labour, per jerib	353	521	603	729
Net returns, per jerib, HH labour	201	-40	1,125	926
Net returns, per jerib, hired labour	76	-165	805	606

*Table notes: Irrigation in the canal area does not require diesel. Input costs include post-harvest payments.*



Figure 5: Increase in the number of solar powered tubewells in Shna Jama, Nad e Ali, Helmand 2013 to 2016. Blue areas represent reservoirs which store water extracted by tubewells



The variability in net returns on opium can also be seen when changes occur in its price. For example, in 2014, the opium price in Nangarhar was as low as US\$119 to US\$139 (12,000 to 14,000 PR) per *seer*, compared to an average of US\$160 (16,500 PR) in 2016. In Helmand in 2009, opium prices were only US\$155 (13,000 PR) per *maun*, compared to around US\$631 (65,000 PR) per *maun* in 2016. At these prices (see Table 3), the profitability of opium is comparable with many of the other winter crops.

Table 3: Effect of price changes on gross and net returns to opium poppy cultivation, per *jerib*.

All amounts in USD

Nangarhar			
Year	Price per kg	Gross Returns	Net Returns
2013-2014	149	983	312
2015-2016	192	1,490	748
Helmand (canal area)			
Year	Price per kg	Gross Returns	Net Returns
2008-2009	34	721	252
2015-2016	140	1,408	1,125

Table notes: Assumes hired labour.

An analysis of the net returns on opium poppy reveals the high costs of inputs compared to those of other crops. This is largely a function of the labour demands of the crop, but also of the higher inputs of the fertilizer urea and DAP and the higher land preparation costs for opium poppy. In 2015/16, those households that did not have the necessary labour and had to hire labour for weeding and harvest incurred input costs as high as 40 percent of the total cost of production. Given the arrangement prevalent in the southern region of paying those who harvest the crop between one-fifth and one quarter of the final opium yield, the labour costs of production will always take a significant proportion of the gross returns.



In the former desert areas, where ground water needs to be pumped to irrigate any crop, more than half (55 percent) of the gross returns on opium in 2016 was absorbed by the costs of production for farmers using diesel powered tubewells, compared to 49 percent for those who had shifted to solar-powered technology. However, the startup costs of this new technology were high: US\$4,985, compared to only US\$1,684<sup>69</sup> for a diesel-powered tubewell (see Figure 6).

This is significant, given that diesel costs were only US\$50 per *jerib* in 2016, down from US\$101 per *jerib* in 2014. At the present price of diesel, the shift to solar would not appear to be economical, although farmers may have been acting to insulate themselves from anticipated future rises in future fuel costs.

The production costs of the second and third poppy crop also absorb as much as half of the gross returns, largely due to lower yields and the need to use water pumps to keep the crop irrigated in the summer, even in the canal-irrigated areas. The production costs for other crops are significantly lower than those of opium poppy. Most other crops can be grown using household labour, so hired labour costs are at a minimum. This means that total production costs rarely add up to more than US\$200 per *jerib*, compared to nearly US\$750 per *jerib* for opium poppy. These high production costs, along with the risk of crop failure, can significantly deter farmers from over-extending their opium crop. In 2016, for example, there were signs of reductions in the level of poppy planting in Helmand even in those areas where there was no risk of government action against the crop and where there had not been any government actions for some time.

Figure 6: Solar powered tubewell, reservoir, and irrigated land, north of Boghra canal, Helmand



69 These costs include: the costs of sinking a well of 70 metres deep at a price of US\$ 5.34 (550 PR) per metre; a water pump for US\$ 291.26 (30,000 PR); the costs of a transformer a further US\$ 291.26 (30,000 PR); pipe for US\$ 533.98 (55,000 PR); and 20 solar panels at a cost of US\$ 135.92 (14,000 PR) each; a metal frame to house the panels, made locally for US\$ 194.17 (20,000 PR); and finally the costs of establishing the reservoir for storing the water which typically requires the hire of a tractor for 40 hours at a cost of US\$ 14.56 (1,500 PR) per hour. The costs of establishing a diesel-powered tubewell include many of these line items minus the solar panels, the frame and the reservoir. The water pump is the same price but is diesel powered.



Figures 7 and 8 show crop mapping of Shna Jama, former desert land north of the Boghra canal, where opium poppy cultivation dropped significantly between 2015 and 2016—such a marked decrease that there was more wheat grown than opium poppy that year. This was a phenomenon that had not been seen since 2010. This reduction took place despite the government’s inability to access the area and the Taliban’s continuous dominance since at least 2008. Considering the political and security conditions, if any area should be the location for expansion, this should be it. The reduction also occurred in an area where opium poppy had been nearly monocropped in 2012 and 2013.

Figures 9, 10 and 11 also show crop mapping, this time from Marjah, an area where there has been a dramatic uptick in violence and insecurity in 2016. Insurgent activity was significant, with the district centre itself under siege in the first month of the year and much of the surrounding rural area inaccessible to government forces. Despite the prevailing level of insecurity and high opium prices, crop mapping shows reductions in the level of opium poppy cultivation between 2015 and 2016. It should be noted that the most significant reduction in poppy cultivation in Marjah occurred between 2010 and 2011, a time of rising opium prices and after negligible levels of eradication but following Operation Moshtarak and the influx of 14,000 US Marines into the area.<sup>70</sup>

<sup>70</sup> Launched in February 2010 and involving 15,000 US, British, Afghan, and other forces, Operation Moshtarak was supposed to be the first in a series of ambitious operations in ISAF’s newly invigorated counter-insurgency strategy made up of a comprehensive military, governance (i.e. “government in a box”), and economic development approach, including targeting the opium economy. Heavily hyped and publicized in advance, it did not live up to expectations.



Figure 7: Crop Mapping for Shna Jama, Nad e Ali, Helmand, 2008-2013

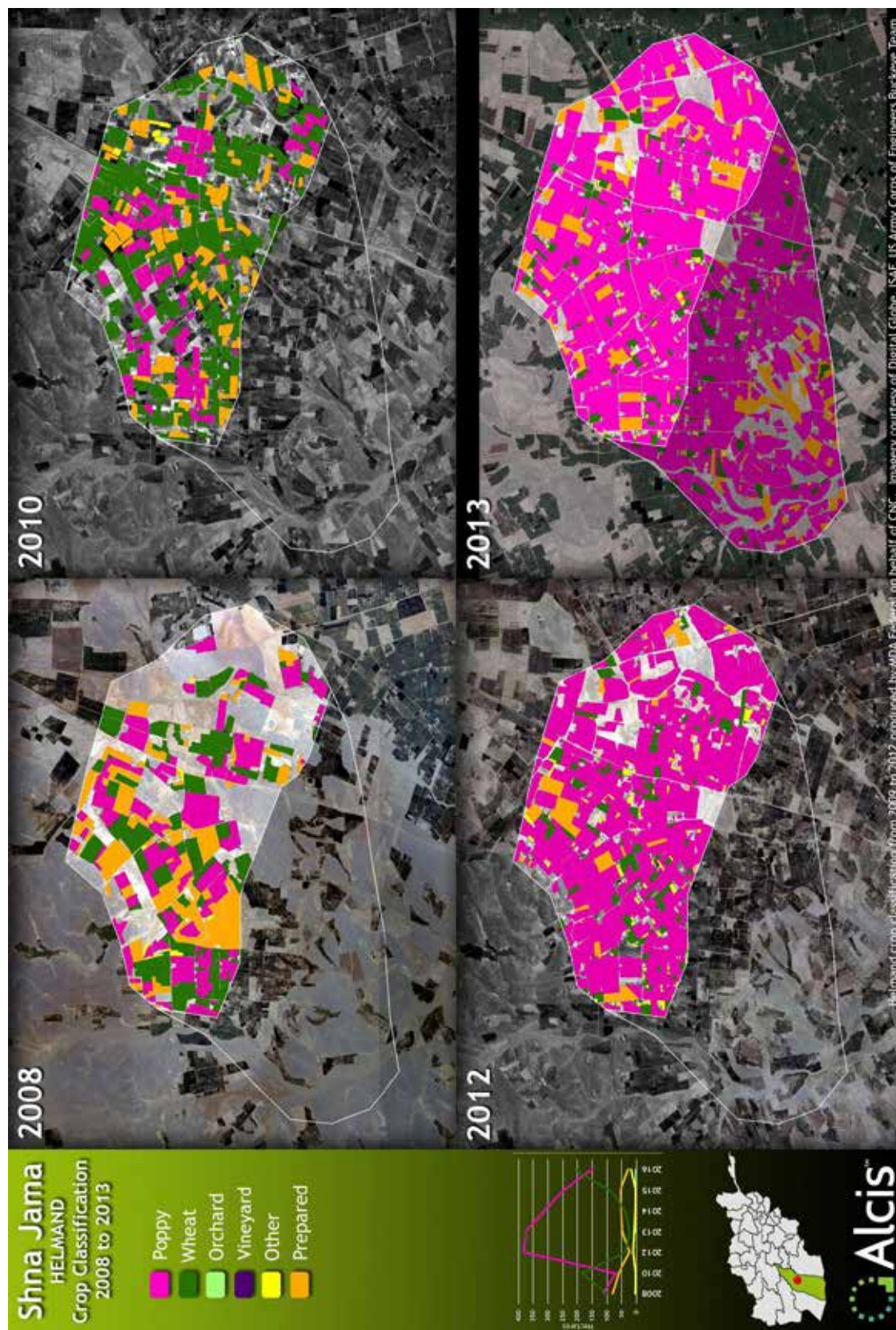
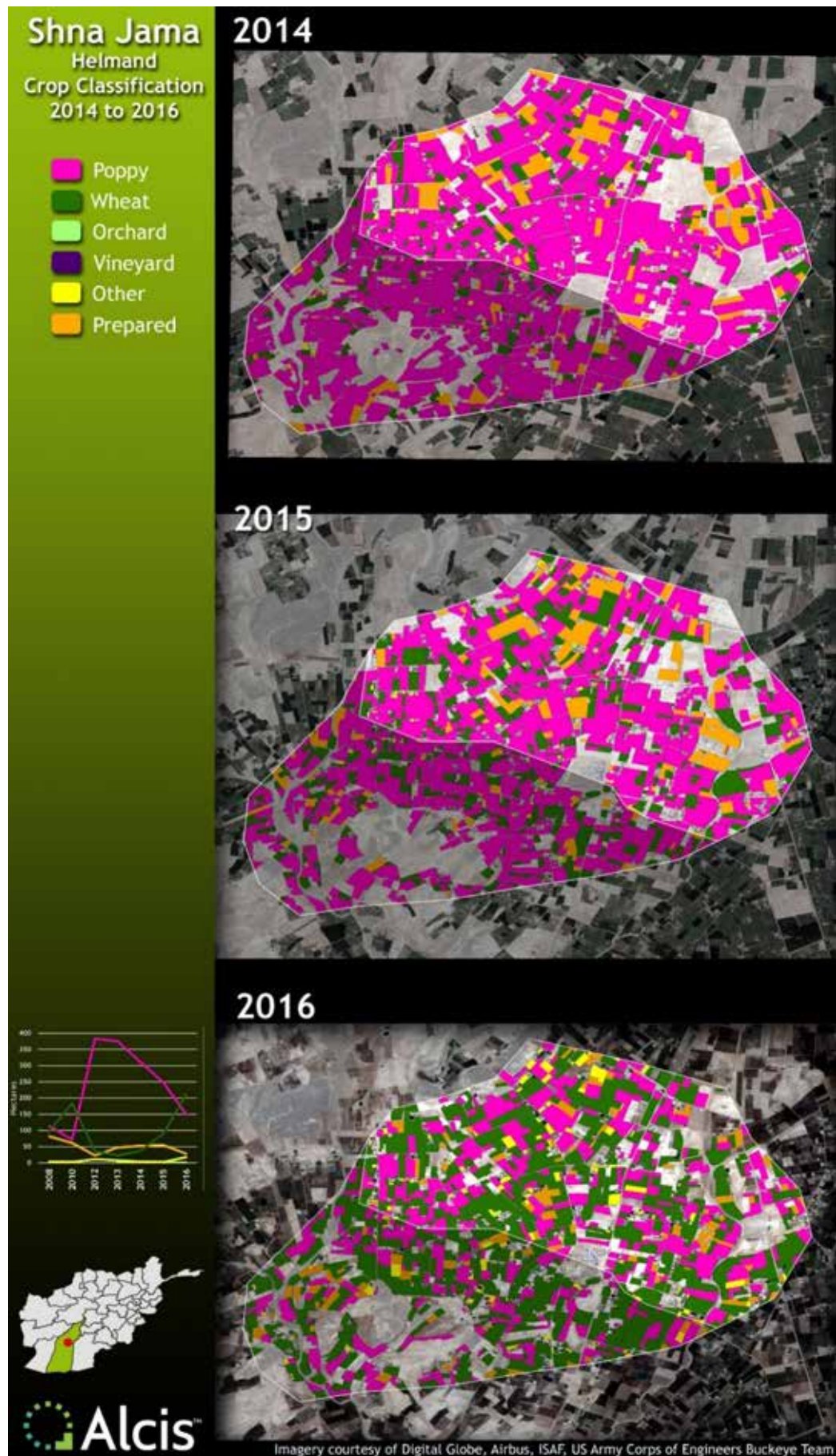




Figure 8: Crop Mapping for Shna Jama, Nad e Ali, Helmand, 2014-2016





.Figure 9: Crop Mapping for Marjah, Helmand, 2008-2010

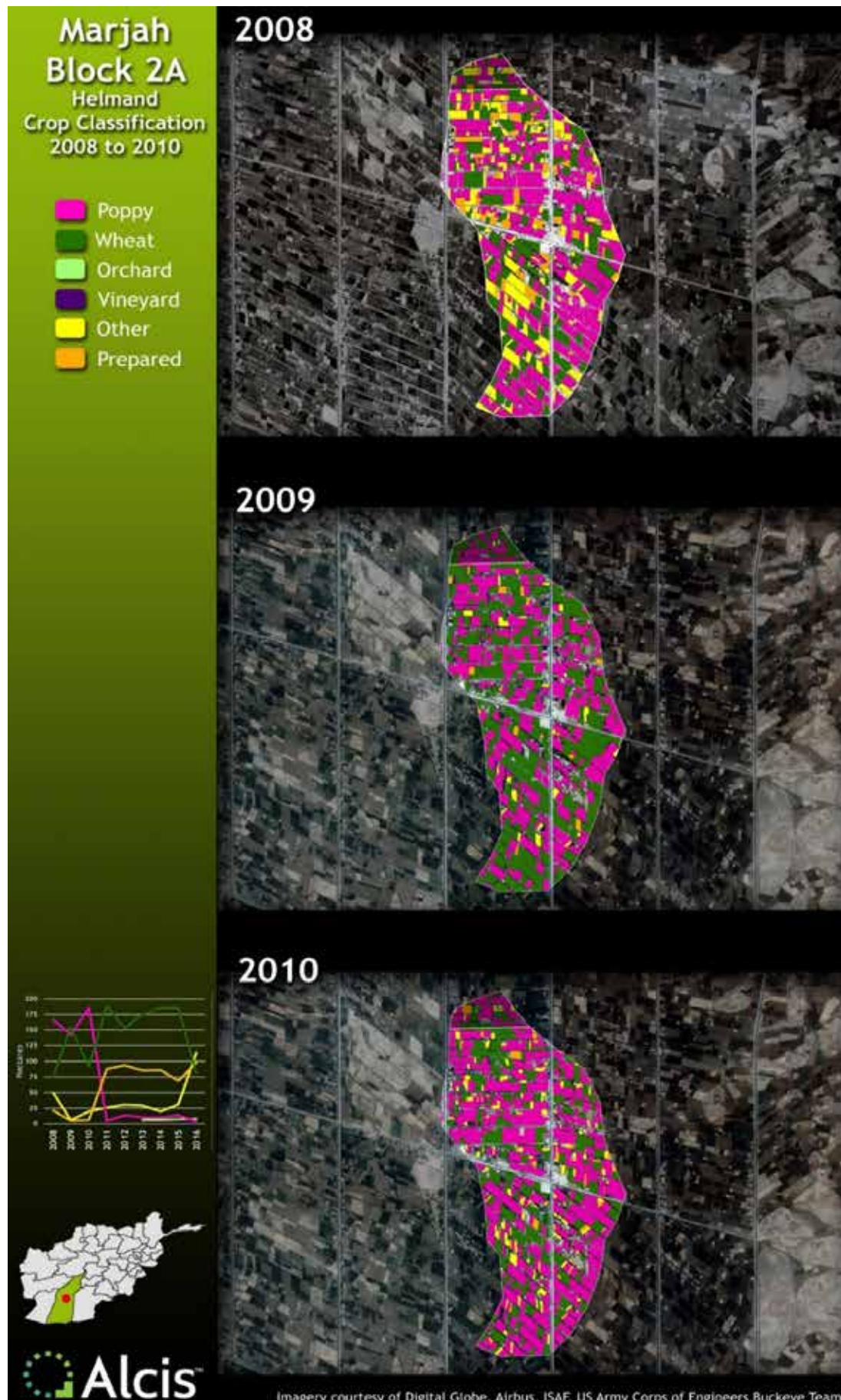




Figure 10: Crop Mapping in Marjah, Helmand, 2011-2013

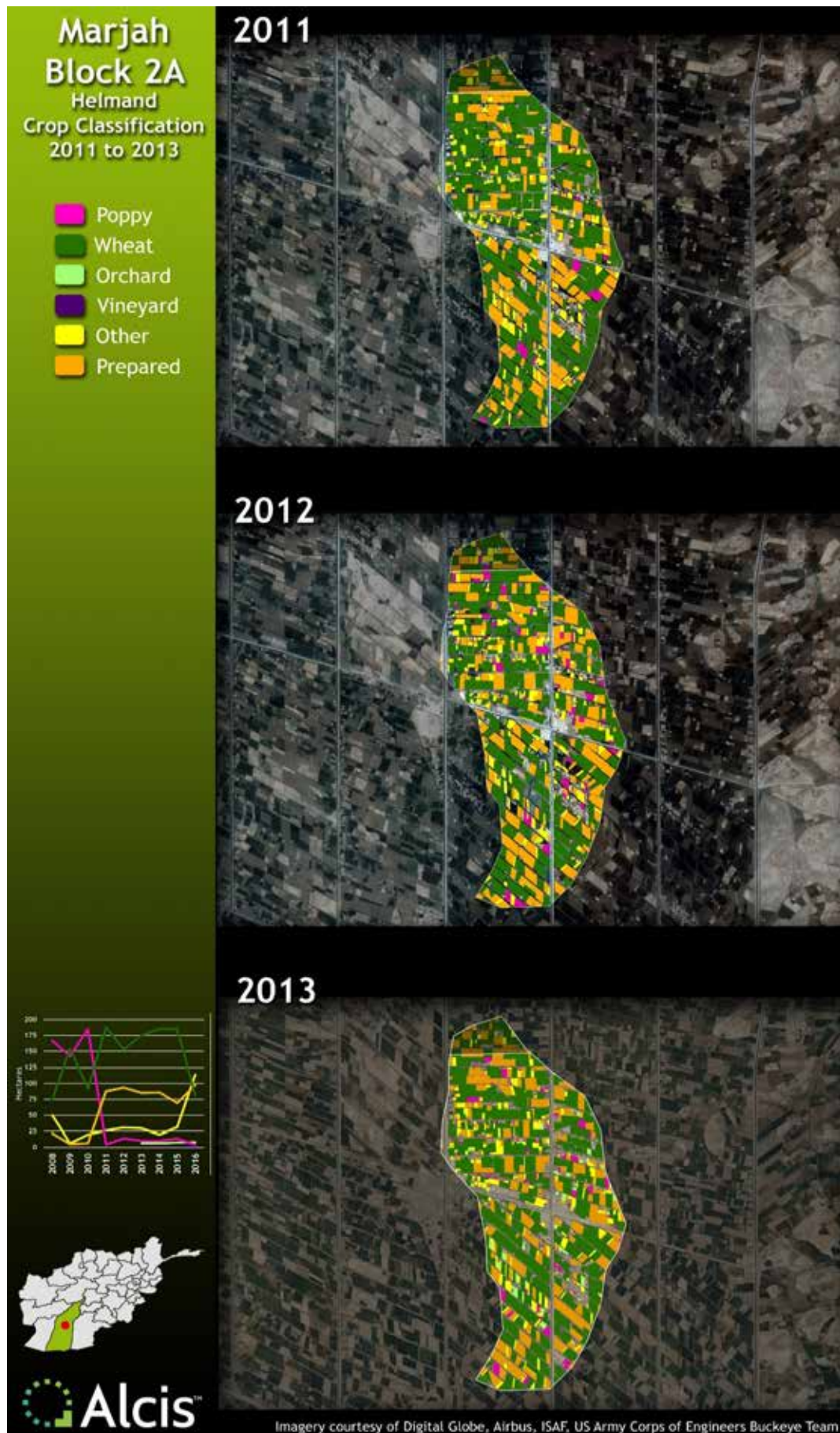




Figure 11: Crop Mapping for Marjah, Helmand, 2014-2016

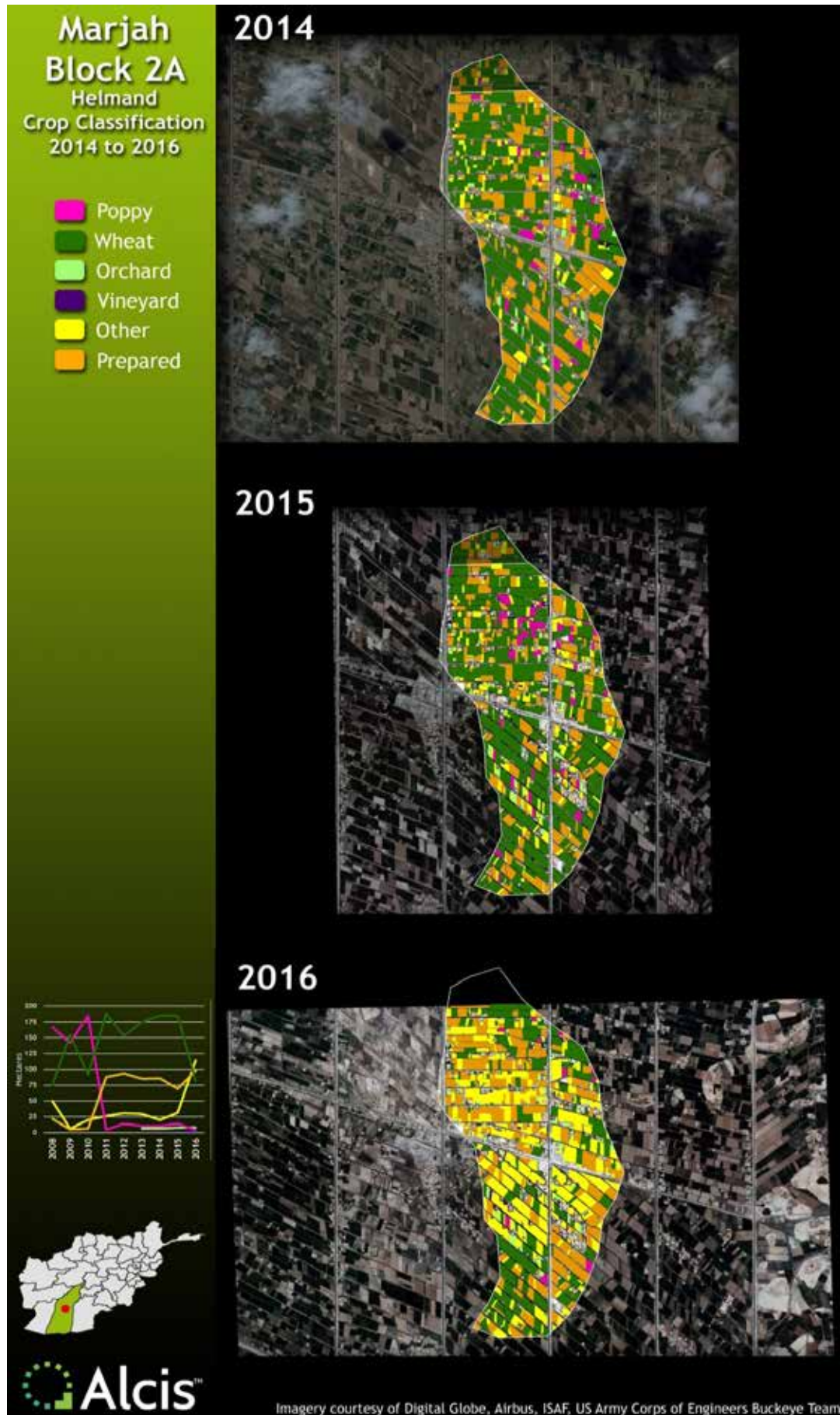
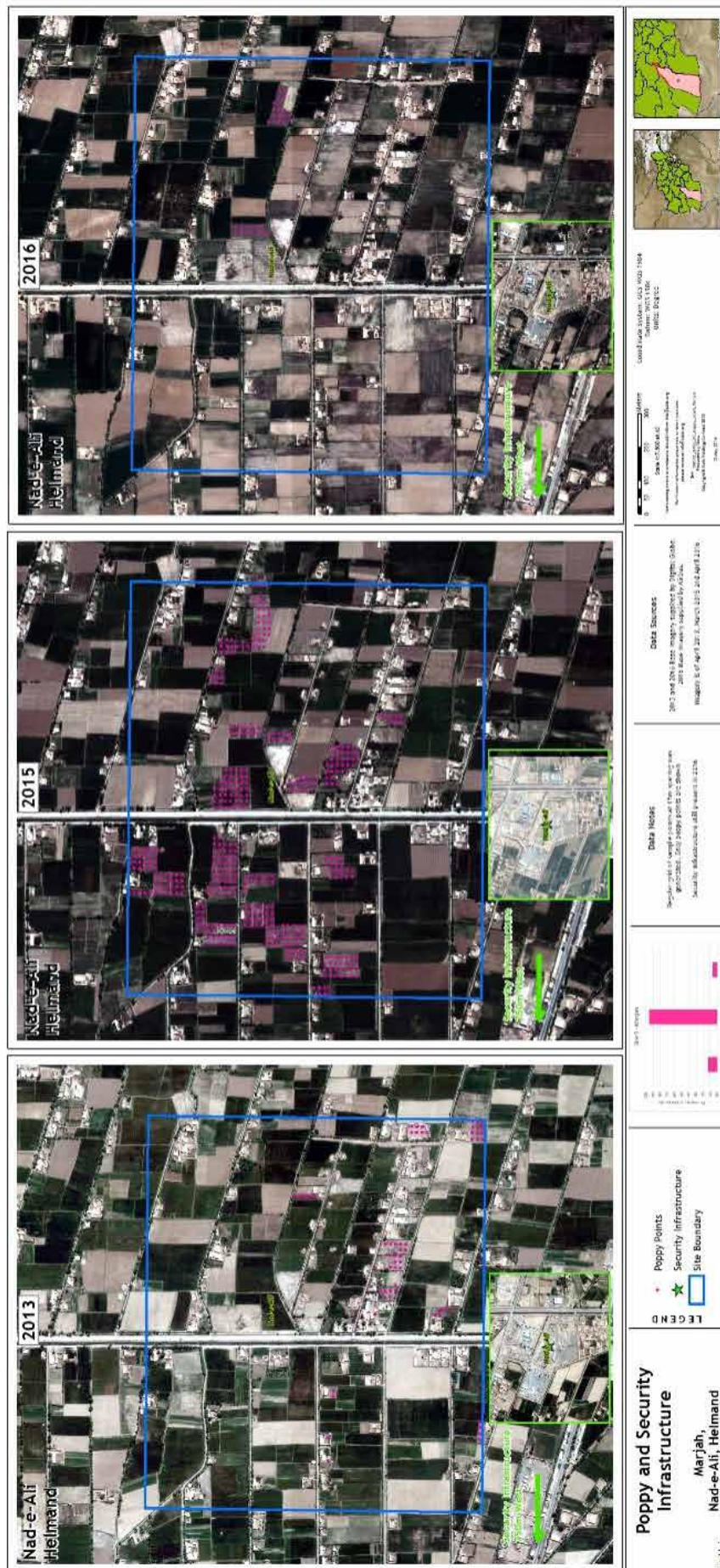




Figure 12: Opium poppy crop, near Marjah District centre, Helmand, 2013 -2016





A closer examination of the land around the Marjah district centre, as seen in Figure 12, shows the reduction of opium poppy in detail. In 2013, the opium crop can be seen in small fields away from the main canal and roads. Often it is grown behind the compound walls in the *mamata*<sup>71</sup>. In 2015, farmers were less circumspect, and opium poppy was grown in much larger fields, this time adjacent to the main canal and the roads in areas very close to an Afghan National Defense and Security Forces (ANDSF) Forward Operating Base. However, despite the increased levels of insecurity, the opium crop all but disappeared in 2016, further highlighting the effect of four consecutive years of low yields on farmers' decisions to plant.

### 4.3 Resource endowments matter: not all households are created equal

This study also shows that net returns for all crops vary across socioeconomic groups, with those who have capital and other resources earning the largest returns. For example, as shown in Table 4, in Nangarhar households with land and sufficient labour to tend to their own crops—including during the harvest season—earned an average net return of US\$1,589 per *jerib* on opium poppy. A household that did not have sufficient labour for the harvest season earned an average of US\$1,117 per *jerib*. Both compared favourably with the net returns to a farmer without owned land who sharecropped others' land. In Nangarhar, where sharecroppers typically incurred half of the total costs of production, this farmer would have earned just US\$749 per *jerib*. Across all crops, sharecroppers earned at most one-half of the amount earned by owner cultivators who farmed using their own household labour. (See Annex B4 for calculations.)

Table 4: Net returns to selected crops for owner-farmed and sharecropped land, Nangarhar

All amounts in USD

Crop	Net returns with:		
	Own Land Using:		Sharecrop Using:
	HH Labor	Hired Labor	HH Labor
Wheat	204	184	97
Opium poppy	1,220	748	564
Watermelon	463	420	232
Tomato	198	198	82
Okra	620	552	290
Onion	595	564	279

In Helmand, the differentials are even more extreme, as sharecroppers typically receive **only one quarter of the final crop**, and even as little as one-fifth in the areas north of the Boghra (see Table 5). In the canal-irrigated area of central Helmand, net returns on the winter opium crop varied from US\$1,125 per *jerib* for those farmers who owned their own land and did not need to hire labour, to US\$805 for those who had to hire labour during periods of peak demand. In comparison, sharecroppers under a 25% percent-share arrangement received net returns of an average of US\$352 per *jerib*—one-third of the amount received by the resource-wealthy. Although slightly different net returns were earned in the former desert areas by those using diesel and solar powered tubewells, the differentials are around the same; the net returns to sharecroppers were one-third of the net returns on the same unit of land to those who had sufficient land, water and labour to manage their own fields. Across all crops, sharecroppers earned one-half or less of the amount earned by owner cultivators who farmed using their own household labour. (See Annex B2 for calculations.)

<sup>71</sup> The *mamata* is the garden within the wall of the household compound, where fruit and nut crops would traditionally be grown, typically for household consumption.



Table 5: Net returns to selected crops for owner-farmed and sharecropped land, Helmand

All values in USD

Crop	Net returns to:		
	Own Land Using:		Sharecrop Using:
	HH Labor	Hired Labor	HH Labor
Wheat	228	218	85
Opium poppy	1,125	805	352
Opium poppy, dasht, diesel	926	606	334
Opium poppy, dasht, solar	999	679	334
Melon	427	427	146
Cauliflower	272	253	107
Onion	718	699	218

In sum, an examination of the net returns on some of the different crops grown in the four provinces shows a high degree of variance. Profitability varies by location, over time, and by socioeconomic group, natural resource endowments and human capital stock. And while opium poppy has been an economically attractive crop in 2016, some other crops offered higher net returns, even in a year when both prices and yields were relatively high. Over time, the net returns on opium confirm that it is a high-cost crop whose cultivation is not without risks. While eradication was a negligible threat in 2015/16, the low yields that have plagued the South for several years<sup>72</sup> did serve to deter cultivation, even in some areas where government access was severely restricted. The high cost of opium production—sometime exceeding 50 percent of total gross returns—has to be a deterrent in these circumstances, particularly for the land-poor who would earn net returns of no more than US\$352 per *jerib*, and even less than that in the former desert areas of Helmand.

#### 4.4 Returns on cropping systems: one among many

As discussed in Section 3, crop comparisons that juxtapose the returns on one crop with another (even using net returns) do not adequately capture the agricultural realities facing the Afghan farmer. Very few farmers in Afghanistan grow only one crop, and the decision to cultivate one crop impacts the other crops that can be grown, not only during that particular season but in subsequent seasons as well.

The most obvious reason that the cultivation of one crop has an impact on other crops is good plant husbandry, which demands crop rotation in order to replenish the soil's nutrients and sustain crop yields. This means that farmers need to maintain an appropriate balance of crops on their land over time if they are to minimize the risk of plant disease and low yields. It also means that, in the long run, farmers are not free to simply respond to price signals, but have to consider the longer-term risks of over-extending one crop and reducing soil fertility, with potentially negative consequences.

The second reason that the decision to cultivate one crop impacts other crops is that different crops have different planting and harvest seasons and different maturation periods. This means that some crops can be combined with others, potentially increasing the economic returns on the land, helping to manage the risk of crop failure and contributing to soil fertility. For example, a winter crop of opium poppy is often rotated with a summer crop of maize, followed by a winter crop of wheat. Typically both the maize and wheat crops that follow the opium crop obtain good yields and require little fertilizer. Farmers attribute this to the extensive weeding of the opium crop and the high levels of urea and DAP that farmers use when growing opium poppy.

<sup>72</sup> David Mansfield, *From Bad They Made It Worse: The concentration of opium poppy in areas of conflict in the provinces of Helmand and Nangarhar*, Kabul, AREU, June 2014, Retrieved from: <https://goo.gl/8auWZk> (Accessed last: 20 September 2016). David Mansfield, *Helmand on the Move: Migration as a Response to Crop Failure*, Kabul, AREU, October 2015, Retrieved from: <https://goo.gl/oZddR2> (Accessed last: 20 September 2016).



In Char Bolak and Chimtal in Balkh, *chars* is planted during the second season, after the completion of the spring wheat harvest, and is often inter-cropped with cotton in part for agronomic reasons but also to discourage eradication. In Kandahar, *chars* is also grown in the second season, but is not inter-cropped with other crops, largely because farmers are not worried about the authorities.

The decision to cultivate opium poppy also commits the farmer to a particular type of cropping pattern. The winter opium crop takes over the land from late October to April/May the following year, which can impose a high opportunity cost for the use of the land. A farmer who monocrops opium rules out the crops that are planted in the winter and spring. These include a wide range of vegetable crops grown for household consumption and for sale: onions, tomatoes, eggplant, okra, pepper, *gandana*, green bean and cucumber. This would potentially deprive the household of cash sales during the early spring before the harvest of the opium crop—a time that is known for food shortage. Furthermore, many of these vegetables can be intercropped, allowing farmers to reduce the risk of crop failure, spread their income more evenly (especially with crops that produce multiple harvests) and increase their total net income per unit of land.

The cultivation of short-season crops—another practice that is ruled out by committing land to opium poppy for five or six months—also allows farmers to exploit as many as four agricultural seasons per year and thereby increase their income. For instance, a farmer with five *jeribs* of land who cultivates a combination of opium and wheat in the winter, followed by maize and mung bean in the summer would receive the yield of ten *jeribs* of land: five *jeribs* from the winter crop and five from the summer crop. However, by offering as many as four growing seasons, the cultivation of a range of short-season crops can providing the household with the yields of 20 *jeribs* of land: five *jeribs* for each season.

Table 6 presents scenarios for two households in Helmand growing crops over three seasons. The first household relies on a standard pattern of wheat and opium poppy in the first season, followed by low value maize and mong bean in the following season. The second household grows slightly more wheat in the interest of food security, but avoids opium poppy, instead growing higher value crops in the second season and managing another short season of mostly high-value crops. With this approach, the household is able to obtain 15 *jeribs* worth of crops from its five *jeribs* of land.



*Table 6: Helmand: Scenarios for cropping patterns in three seasons: opium poppy & wheat vs. diversified crops taking advantage of short seasons.*

All amounts in USD

	Household 1			Household 2	
	Returns, per jerib	Jeribs planted	Net Returns	Jeribs planted	Net Returns
	Winter (first season)				
Wheat	228	3	683	4	911
Opium poppy	805	2	1,610	-	-
Cauliflower	272	-	-	1	272
Total winter crops		5	2,293	5	1,183
Summer (second season)					
Maize	107	3	321	-	-
Mongbean	152	2	303	-	-
Onion	718	-	-	2	1,437
Tomato	157	-	-	2	314
Cucumber	-64	-		1	- 64
Total summer crops		5	624	5	1,686
Additional season (third season)					
Gandana	465	-	-	1	465
Tomato	157	-	-	2	314
Onion	718	-	-	2	1,437
Total additional crops		0	-	5	2,215
TOTAL JERIBS/CROP INCOME		10	2,917	15	5,084

*Table notes: Returns based on Helmand household owning five jeribs of land. Assumes hired labour for opium poppy, household labour for other crops.*

Some land is, of course, already allocated to orchards, vineyards and nuts. As shown in Table 1, returns to orchards can be very favourable. Even in cases where the economic returns on this land may not be particularly high, farmers will still not revert to other crops. This is particularly the case with orchards and vineyards which often have a prestige value that goes beyond simple economic benefits. In the case of orchards, they may have an aesthetic value and offer a place to seek shelter from the sun during the summer months. Many fruit crops are consumed within the household and are given to guests, elevating the status of the household. Almonds in Balkh and pomegranates in Kandahar have historically been a source of pride and identity, and thus have a value beyond a strictly financial one.

A further reason for farmers to take a broader cropping systems perspective is the desire to strike a balance between their need for those crops with an **exchange** value, and those crops that have a **use** value. For example, wheat grain is consumed by the household, and wheat straw has multiple purposes, including as feed for livestock. Over-extending the opium crop each year can not only deplete soil nutrients, leaving the opium crop vulnerable to disease, but it can also pose a threat to household food security. The consequences of this could be seen in many parts of central Helmand in late 2007 and into 2008 when a rapid rise in wheat prices due to shortages in the global market, as well as border controls imposed by Pakistan in an attempt to curb the smuggling of wheat flour into Afghanistan, led to farmers curbing the amount of opium they grew. This was not because opium was necessarily financially less profitable than wheat but because the farmers were not sure whether they would be able to buy the wheat flour and wheat straw



that they needed to feed both their families and their livestock. Farmers are abundantly aware of the need to ensure a certain level of food production if markets should fail. In fact, in central Helmand there is tendency for farmers to prioritize wheat production, calculating how much land they need to maintain household food security and setting that land aside, before allocating any surplus land to cash crops such as opium poppy, melon, watermelon and cotton that offer both a use and exchange value.

The data from the four provinces covered by the fieldwork illustrates how households take advantage of short season crops to effectively increase the amount of land that they have under cultivation and thereby increase their annual net income. It can be seen that where farmers have this option - largely defined by the availability of sufficient and consistent irrigation and proximity to urban markets - the net returns on a diversified cropping system are almost comparable with those in the more remote areas, who are much more dependent on a cropping system characterised by opium poppy and wheat in the winter months.

## 4.5 Returns on livelihoods: the full picture

According to the National Risk and Vulnerability Assessment (NRVA), nearly half (49 percent) of all rural households reported that non-farm wages and other activities were their main income source.<sup>73</sup> It is therefore, necessary to move beyond agricultural crops and how they are combined into cropping systems and look at other component parts of the livelihoods portfolios of households, as these other elements also impact on what crops can be cultivated and on how much land, as well as what opportunities household members may have to obtain income from other sources.

For example, a further element that needs to be built into the livelihood analysis is livestock. A farmer who has a number of large animals such as oxen, cattle and dairy cows requires food for them. This often means dedicating land to wheat and fodder crops, each of which reduces the amount of land that can be allocated to cash crops such as opium poppy, but that also produces returns that can compensate for those cash crops not grown.

In this regard, the returns on a *jerib* of wheat or alfalfa should not be seen only in terms of the exchange value of selling the final crop. Rather they should be seen as inputs into livestock, which in turn provides income from the sale of meat and dairy products such as yoghurt, cheese, and *chiqa* (a concentrated form of yoghurt). For example, in the districts of Surkhrud and Kama in Nangarhar, three dairy cows would provide sufficient milk for family consumption as well as a surplus that would earn around US\$500 in sales for cheese and as much as US\$900 for yogurt: almost as much as the net returns on opium poppy. Table 7 illustrates the livelihood picture of such a household in comparison with one which grows a small amount of poppy and has a less diversified selection of crops and related productive activities.

73 "Poverty Status in Afghanistan: A Profile Based on the National Risk and Vulnerability Assessment (NRVA) 2007/8."



Table 7: Nangarhar: Scenarios for cropping patterns &amp; contribution of off-farm and livestock income.

All amounts in USD

Net amounts in USD

	Returns, per jerib	Household 1		Household 2	
		jeribs	Net Returns	jeribs	Net Returns
Winter					
Wheat	204	3	611	2	408
Opium poppy	748	1	748	-	-
Tomato	198	1	198	1	198
Gandana	314	1	314	1	314
Onion	595	-	-	1	595
Total winter crops		6	1,872	6	1,515
Summer					
Maize	89	2	178	-	-
Mongbean	87	3	261	-	-
Tomato	198	-	-	2	397
Okra	620	1	620	1	620
Taro	651	-	-	1	651
Turnip	136	-	-	2	272
Total summer crops		6	1,060	6	1,940
Additional season					
Cauliflower	569	-	-	2	1,138
Gandana	447	-	-	2	895
Onion	430	-	-		
Squash	108	-	-	2	217
Total additional crops		0	-	6	2,249
TOTAL JERIBS/CROP INCOME		12	2,932	18	5,704
+ Non-farm income: workers	2,800		-	1	2,800
+ Livestock income					
Livestock sales	680		-	1	680
Dairy products	897		-	1	897
TOTAL LIVESTOCK INCOME	1,577		-		1,577
HOUSEHOLD LEVEL PAYMENTS					
Mullah's salary, per year	35				
Mirab's payment	4				
TOTAL HOUSEHOLD LEVEL PAYMENTS	39		39		39
TOTAL NET INCOME FOR HOUSEHOLD			2,932		10,081
INCOME PER CAPITA			293		1,008
INCOME PER CAPITA PER DAY			.80		2.76

Table notes: Returns based on household of ten persons owning six jeribs of land. Assumes hired labour for opium poppy, household labour for other crops.



A crop such as opium not only occupies land that could be used for other crops, but also absorbs critical inputs, in particular household labour. The labour inputs and subsequent costs for opium production are high; many farmers with insufficient household labour reported having to hire two or three labourers to help with the harvest. In Helmand and Kandahar, these harvesters typically received up to one quarter of the final crop, a value of almost US\$350 per *jerib* in 2016. In Nangarhar, farmers typically paid harvesters in cash the equivalent of US\$360 per *jerib*, against gross revenue of US\$1,490.

Moreover, aside from direct financial costs, hiring labourers to work the opium crop has other risks and costs related to supervision and monitoring. The landowner must ensure that the raw opium is not stolen; respondents have described various procedures to reduce this risk. In areas where cash wages are paid, some households refrain from cultivating a level of opium poppy beyond the capacity of their own household labour in order to avoid the capital outlay needed to hire outsiders. Hiring relatives is one way of partially mitigating the risk of theft and deferring the payment of wage labour until the harvest season is over. At the same time, using household labour imposes the opportunity cost of lost off-farm employment (although that cost has decreased in recent years as the overall Afghan economy has contracted and well-paying employment alternatives have diminished).

Incorporating the potential off- and non-farm incomes of household members into the analysis of livelihood portfolios confirms the contribution these incomes make to household net income and shows how favourable such outside income is compared to the net returns on opium production. For example, in Nangarhar a family member serving in the Afghan National Army earns the equivalent of US\$2,924 per year; one who serves in the Afghan National Police brings home US\$2,745 per year. Farmers rarely withdraw family members from employment in the ANDSF for the purpose of opium poppy cultivation; rather, they look to keep poppy cultivation at a level that is commensurate with household labour supply.

Similarly, in Balkh a typical household (Table 8) in proximity to Mazar-e Sharif can supplement diversified crop income with revenue gained from selling dairy products to outlets in the city. As the rural areas have become more integrated with the cities, selling household dairy production, which in the past was done only to a limited extent, has become more socially acceptable. Households can further supplement their livelihoods by obtaining off-farm employment in the construction, transport, or other sectors connected to the urban economy. These sources of income were especially important following the suppression of opium poppy in the province in 2007 and continue to contribute to household livelihoods, although beginning around 2013 skilled and unskilled labour wages as well as work opportunities began to tail off. Although the climate in Balkh is not as accommodating of a third cropping season as in the three other provinces, farmers are increasingly able to stretch the growing season by building low plastic greenhouses for field crops. These have the additional benefit of accelerating the ripening of vegetables, which allows farmers to take advantage of high prices prevailing before peak harvest time. For those who possess garden lands, almonds and other tree crops are also a highly remunerative source of income.



Table 8: Balkh: Scenarios for cropping patterns &amp; contribution of off-farm and livestock income

All amounts in USD

	Returns, per jerib	Household 1		Household 2	
		Jeribs planted	Net Returns	Jeribs planted	Net Returns
Winter					
Wheat	168168478	3	503	2	335
Opium poppy	924	1	924	-	-
Melon	479	1	479	1	479
Cotton	590		-	1	590
Almond	4,077		-	1	4,077
Total winter crops		5	1,906	5	5,482
Summer					
Maize	96	2	192	1	96
Mongbean	75	2	150	1	75
Sesame	193		-	1	193
Cotton	136	1	136	2	272
Total summer crops		5	478	5	637
TOTAL JERIBS/CROP INCOME		10	2,384	15	6,119
+ Non-farm income:	2,365		-		2,365
+ Livestock income	1,112		-		1,112
- Household Level Payments	53		53		53
TOTAL net income			2,331		9,542
Income per capita			233		954
Income per capita per day			.64		2.61

Notes: Returns based on Balkh household of ten persons owning five jeribs of land. Assumes all household labour except for opium poppy, which uses hired labour. Off farm income from one teacher or government employee (US\$883) and one unskilled labourer (US\$1,482).



## 5. Conclusions

There is much hand wringing and finger-pointing when policy discussions turn to opium production in Afghanistan. The drug control community laments the lack of “government commitment,” criticizing the government for what is perceived as an unwillingness to act against those involved in the production and trade of opium and its derivatives.

Those involved in the security sector turn a blind eye to the growing levels of opium production that surround ANDSF bases and the main arterial roads, arguing that illicit drugs are not a priority, given the territorial gains made by the insurgency and the fragility of the National Unity Government. The development community also proceeds with its head in the sand. Their major stated priority is corruption—although it is hard to imagine how this can be separated from Afghanistan’s role as the producer of 90 percent of global illicit opium, and how development can be discussed while ignoring the country’s largest export and major employer.

There seems to be a tacit agreement across the drug control and development communities that the drugs issue should not be discussed, or if it is, it should be kept in the margins. To some extent this is understandable. Both the government and the international community have been seeking successes, particularly in the run-up to the donors’ conference in Brussels in October 2016. At that time, attention turned to what had been achieved so far in Afghanistan, and there was a renewed focus on what is achievable in the current precarious political situation where the insurgency is making gains in provinces like Helmand, Kunduz and Nangarhar.

Against this backdrop and the measures of success that are most often used to judge the drugs situation in Afghanistan—levels of opium poppy cultivation and eradication—there is little to celebrate. Cultivation has risen dramatically since the end of the International Security Assistance Force (ISAF) mission and the withdrawal of international military forces. Crop destruction was negligible in 2016 with only 454 hectares destroyed compared to 3,684 in 2015<sup>74</sup> and 9,672 in 2012<sup>75</sup> when the international military presence was at its peak. Further, whatever respite there was for the drug control community (the high incidence of disease in the South West that depressed the level of planting in 2015/16) may not have a long-term effect.

This respite was ended by the recovery of opium yields in the spring of 2016, the uptake of solar powered tubewells in the former desert areas, and the increasing experimentation with summer and even fall crops of opium poppy in the upper reaches of Helmand and Kandahar. Even what had been achieved with regard to building an “end-to-end” justice system for narcotics-related crime—a system that the development community is now looking to mimic by building a parallel system for corruption cases—is being slowly dismantled with the losses of mentors; the inability to conduct polygraph tests on judges, prosecutors and investigative officers; and resources increasingly channelled into counterterrorism.

In defence of the turning away from the deteriorating situation vis-a-vis narcotics, policy makers are asking what can realistically be achieved, given the current situation in Afghanistan. But it does not seem any more likely that there will be significant progress on corruption, a task they have now set for themselves and are supporting with growing policy statements, targets and resources.<sup>76</sup> Surely the same challenges of growing insecurity, the weak domestic sovereignty of the Afghan state and the political networks that have protected the drugs trade are just as relevant to the struggle against corruption.

<sup>74</sup> UNODC and MCN, *Report on poppy eradication verification in Afghanistan*, report No 5, June 2016, Retrieved from: <https://goo.gl/ZaLPWe> (Accessed Last: 20 September 2016)

<sup>75</sup> UNODC, MCN, *Afghanistan Opium Survey 2015 Cultivation and Production*, December 2015, p.26. Retrieved from: <https://goo.gl/Ow9IPo> (Accessed last: 19 September 2016).

<sup>76</sup> Afghan Peace and Development Framework, Office of the Deputy Minister for Policy, Ministry of Finance, 2016, Retrieved from: <https://goo.gl/HJwCTI> (Accessed last: 19 September 2016).



A further defense for policy makers' myopia on narcotics is the often-repeated statement that nothing can compete with the profitability of opium poppy and that it is therefore futile to try to do anything to counter its cultivation. Here policy makers rely on the statistics of UNODC: the statements that: "opium poppy earns 27 times more than wheat",<sup>77</sup> ". . . ten times more than wheat" or even ". . . three times more than wheat"<sup>78</sup> and that the primary reason for cultivating the crop is the "high price"<sup>79</sup> that is repeatedly cited in policy statements, the media and scholarly articles.<sup>80</sup> The relative returns on these two crops is seen as a critical factor in determining the cropping decisions of farmers prior to planting. UNODC suggest that this comparison offers "an indication of the attractiveness of cultivating"<sup>81</sup> while writers like Caulkins et al (2010: 9) claim: "Perhaps the largest driver of changes in hectares under poppy cultivation is not eradication or enforcement risk, but rather last year's opium prices as compared to current prices of wheat and other crops."<sup>82</sup>

This report has highlighted the problems with the data and with the conceptual and analytical models on which these statements are based. It has shown that a comparison of gross returns is not appropriate and that when the costs of inputs are considered, opium poppy is not always the most profitable crop. It has identified fact crops that generate high net returns even in what is a relatively good year in terms of opium yields and prices, such as is the case in 2016. The report has also shown how varied the returns on opium are, differing by location, time and socioeconomic group; it has illustrated these differences with the example of the land-poor earning less than one-third of the net returns received by those with sufficient land, labour and irrigation.

The report has also shown just how problematic a crop-by-crop comparison is—even one that does not simply compare the gross returns on wheat and poppy. It has illustrated how the decision to cultivate one crop impacts the portfolio of activities that a household is involved in: the crops they grow across multiple seasons, their livestock and the income they derive from the livestock, and how they allocate their labour.

Ultimately this analysis of the livelihood portfolios of respondents in the provinces of Balkh, Helmand, Kandahar and Nangarhar has reinforced awareness of how complex rural livelihoods are in Afghanistan. It has also shown some of the crop's economic vulnerabilities in terms of the relatively low net returns that sharecropping households derive from opium production and the potential income to be earned from off-farm and non-farm income opportunities. This analysis shows that opium poppy remains attractive not due to its price *per se*, but largely due to the low opportunity costs of labour. It is high levels of unemployment and underemployment in rural Afghanistan that render the crop more economically attractive than it might be if family labour were not considered to be without cost.

77 UNODC, MCN, *Afghanistan Opium Survey 2004*, November 2004. P. 1. Retrieved from: <https://goo.gl/03kVnO> (Accessed last: 16 September 2016).

78 UNODC, MCN, *Afghanistan Opium Survey 2010*, Kabul, December 2010, p. 24. Retrieved from: <https://goo.gl/9aMUNS> (Accessed last: 17 September 2016).

79 See Section 3.1

80 Buxton, J. (2006). *The Political Economy of Narcotics, Production, Consumption and Global markets*. London, U.K.: Zed Books, page 103; Felbab-Brown, V. (2010). *Shooting Up: Counterinsurgency and the War on Drugs* Washington DC: Brookings Institute Press, page 127. Allan, N. (2004). Opium Production in Afghanistan and Pakistan. *Dangerous Harvest: Drug Plants and the Transformation of Indigenous Landscapes* (Eds) Steinberg, M. Hobbs, J.J. & Mathewson, K. New York, U.S.A.: Oxford University Press, page 147.

81 UNODC, MCN, *Afghanistan Opium Survey 2009*, Kabul, September 2009, p. 94. Retrieved from: <https://goo.gl/0QepNO> (Accessed last: 17 September 2016). UNODC, MCN, *Afghanistan Opium Survey 2010*, Kabul, December 2010, p. 76. Retrieved from: <https://goo.gl/9aMUNS> (Accessed last: 17 September 2016). UNODC, MCN, *Afghanistan Opium Survey 2013*, Kabul, December 2013, p. 63. Retrieved from: <https://goo.gl/XwAv5Z> (Accessed last: 17 September 2016).

82 Jonathan Caulkins, Mark Kleiman & Jonathan Kulick, *Drug Production and Trafficking, Counterdrug Policies, and Security and Governance in Afghanistan*, New York City, U.S.A.: Center on International Cooperation, New York University, March 2010, Retrieved from: <https://goo.gl/tYBsCu> (Accessed last: 20 September 2016).



What the report has shown more than anything else is how contingent opium production is on decisions made across a whole range of economic activities that a household might be involved in and, in turn, how contingent these activities are on opium poppy cultivation. Opium poppy affects the legal crops that a household grows and decisions regarding livestock and off-farm and non-farm income, and vice versa. It is as elemental to the economy as corruption and security. Indeed, opium production remains Afghanistan's most valuable export, and its cultivation and trade employ more people than any other sector in the country. Given how embedded the crop is within the economic and politic fabric of the nation, it remains to be seen how long the government and the international community can ignore it, particularly with the likelihood of further increased levels of cultivation in 2017, and what is likely to be the nation's growing dependency on the crop as levels of international assistance diminish.



## 6. Recommendations

For more than a decade, it has been almost universally accepted that drugs are a cross-cutting issue in Afghanistan. This assumption has been included in the communiqués of international conferences in Afghanistan, in various incarnations of the Afghanistan National Development Strategy and in numerous policy statements by Western governments. Despite the widespread acceptance of this belief, there is little evidence that drugs have been factored into the design and implementation of development, governance and security interventions.

The challenge remains that despite the rhetoric, the drugs issue is still largely misunderstood by senior policy makers who remain some distance away from the complex social, economic and political processes that influence opium production, and who often see conversations about the multiple rural realities in Afghanistan as focusing excessively on details—being “in the weeds.” Unfortunately, many debates at the policy level continue to be shaped by a search for short-term results and by disappointment that there is no silver bullet: “Why don’t we just buy the crop?” “Why don’t we just legalise?” “Why don’t we just guarantee to buy the wheat crop at a high price?” “Why don’t we just destroy the crop?” The use of the word “just” suggests that there is a single solution—a suggestion that, when discussing the complexities of Afghanistan in general or of drugs in Afghanistan in particular, seems particularly misplaced.

The inconvenient truth is that there is not “just” an alternative to opium production in Afghanistan (or indeed elsewhere). Afghanistan will certainly be producing opium for at least another generation unless there is a sharp decrease in the demand for opiates across the globe. Enduring reductions in opium production across Afghanistan will not be the result of the introduction of a single high-value crop as profitable as opium poppy, of efforts to increase wheat yields, or of the introduction of biological or chemical agents to destroy the crop.

As demonstrated throughout this report, the complexity of factors contributing to the cultivation of opium poppy resists simple solutions. There is no technical fix to opium production in Afghanistan, as much as we might try and find one. Sustained reductions in cultivation are localised, and apart from areas around the provincial centres where the socioeconomic and political conditions are conducive, results are slow and hard won. Such reductions are a consequence of the interactions of efforts to improve governance, security and economic development in a given area. They are not the result of province-wide bans or other drug-control interventions designed in parallel with other development programmes. Reductions in one geographic area are likely to be accompanied by increases in other areas as economic indicators and political conditions shift.

There is no predictable downward trajectory of aggregate reductions; people and markets will respond to the new realities that evolve as a consequence of outside interventions and a recalibration of economic and political interests. We can see this process at work in provinces such as Balkh and Nangarhar, where cultivation has been reduced at various times in recent years and where the impact of the bans on opium production (along with the unintended consequences) varies by location, socioeconomic group and time period.

**The primary challenge is to change the nature of the political debate on the drugs problem in Afghanistan and in Western nations, particularly in light of the potential for significant increases in cultivation in the near term.** There has been enough hand wringing with regard to the problem of drugs in Afghanistan. What is now required is a heavy dose of realism. Drugs will continue to be an integral part of the political economy of Afghanistan, and it would be negligent to downplay or even ignore their role in shaping the physical and political geography of the country, as the current Afghanistan National Peace and Development Framework does. Control over the revenues from drug production and trade will influence livelihood trajectories, economic growth and local political settlements (including the behaviour and perception of the ANDSF), and will affect future elections. Policy makers need to acknowledge this; to view drugs as part of the economic, political and physical landscape in which they are operating; and to identify how drugs will affect and be affected by proposed security, governance and development interventions outlined for Afghanistan—most immediately those proposed at the October 2016 donors’ conference in Brussels.



The following are recommendations for moving towards a more effective strategy for addressing the deleterious effects of illicit drugs on Afghanistan's political economy.

- **Assess all national, multilateral and bilateral development programmes for their impact on the production, trade and use of opium and of its derivatives.** These counternarcotics (CN) assessments should be a mandatory feature of the approval process for financial and technical assistance that lies with the Ministry of Finance. The format for these assessments should draw on the guidelines that were developed by the World Bank for CN mainstreaming in 2007 but have been largely ignored (see Annex C).
- **Conduct a comprehensive CN review of the National Priority Programmes (NPP).** This review will ensure that those responsible for these programmes understand the impact they might have on the illicit drug problem, and take steps to maximise positive impacts when conducting such activities. In particular, there is a need to build the synergies between different sectoral interventions through area-based planning in order to maximize both development and counternarcotics outcomes.
- **Look beyond simple and outdated models of crop substitution.** Evidence suggests that rural communities can transition out of opium production when they can realise broader development goals. These goals do not pertain only to the diversification of on-farm, off-farm and non-farm income, so that households can better manage risk and improve their economic situation; they also give rural communities access to a wider basket of goods: improved security and greater service delivery, such as through schools and health services, that denote a growing social compact with the state.
- Increased non-farm income has been a critical element in building household resilience to shocks such as crop failure and opium bans in different parts of Afghanistan. The livestock sector has also supported a shift in cropping patterns, as well as improved income and social protection. Greater investment is required in these areas and others if reductions in cultivation are not simply to result in a relocation of cultivation to former desert lands and other areas out of reach of the state. In fact, greater value-added agribusiness and increased trade in higher-value licit products which are part of the country's overall development strategy would contribute to this process.
- **Use performance measurement to prioritize the assessment of crop and income diversification.** Empirical research shows that replacing opium poppy with wheat or other staples is typically a household's short-term response to coercion, and that farmers will soon thereafter resume opium production. Experience demonstrates that enduring reductions in cultivation are a function of livelihood diversification, of movement into high-value horticultural crops (which allow reductions in staples like wheat and maize), and of the availability of non-farm income. There is a need to move away from measuring the success and failure of counternarcotics efforts based on the annual counting of hectares of opium poppy grown. It has not proven to be helpful and has distorted policy discussions.
- **Focus development investments in those rural areas where investments will both deliver realistic outcomes and be practicable.** The NPPs often appear geographically blind. Other than the discussion of "economic corridors" and provincial-level investments, there is little sense of the geographic priorities of the government within provinces, or of how investments in these areas might support state stability, equitable economic growth, and efforts to support farmers' transition out of opium poppy cultivation. There is a need to set geographic priorities within the context of the likely scenarios within provinces for security.

The ANDSF is already under strain and is being pushed back to areas where the state has a history of control. There are likely to be areas around the main highways and provincial centres where the ANDSF can dominate, where continued development investments will be possible, and where opium poppy cultivation is least likely to return. However, there will also be areas within many provinces where development investments will yield little or where such investments may even be impracticable given the likelihood of a contraction in the areas under central state control. The challenge will be greatest in



the intermediate areas within a province where the central state does not have direct control but maintains influence through local power brokers whose interests are not always perfectly aligned with Kabul's.

Decisions will have to be made about the appropriate mechanisms for delivery of assistance under these sub-optimal conditions, the development outcomes that can be expected, and the response to enduring opium poppy cultivation in these areas, at least in the medium term. Policy makers will need to learn to work within this challenging political terrain if the government is not to find itself hemmed into the cities, towns, and lower valleys.

- **Strengthen the technical and strategic capacity of the Ministry of Counter Narcotics (MCN).** A stronger MCN could—in line with its assigned policy and coordination functions—support line ministries to maximise the counternarcotics outcomes of their programmes. To do so, the Ministry needs to build an advisory capacity that draws on a better understanding of the impact of different interventions on the drugs problem and how these interventions vary under different socioeconomic, political and environmental conditions. This evidence base should be used to develop operational guidelines to support line ministries in areas such as irrigation and infrastructure, as well as interventions aimed at the land-poor. A stronger MCN also requires that the Ministry be able to ensure that line ministries acknowledge and adhere to government-wide CN policies such as mainstreaming.
- **From an analytical perspective, abandon the crop comparisons that have dominated the descriptions of opium production in the literature of UNODC and the MCN.** As this report has shown, a comparison of the gross returns on wheat and opium is especially unhelpful and has contributed to distorted policy options. A comparison of different cropping systems and livelihood portfolios is more useful in understanding how rural households and communities live and the multifunctional role that opium plays in the rural economy of different socioeconomic groups. It is an approach that helps identify who benefits most and least from production and how different interventions will deter cultivation, while others may actually encourage it.
- **Recognise that interventions that raise the opportunity cost of labour would have the greatest development impact on opium production.** Among such interventions are improved non-farm income opportunities (including small business loans), livestock production, diversified cropping systems and agro-processing for agricultural labourers. Opium production remains vulnerable to diminishing net returns, particularly for the land-poor who provide a relatively cheap and skilled labour force for the opium economy. The crop is particularly labour-intensive and highly susceptible to rising labour costs, especially at a time when yields and/or prices are falling. Moreover, targeting interventions at the land-poor would satisfy the pro-poor mandates of development donors while also addressing one of the key vulnerabilities of opium production.
- **Provide new lands to the agricultural poor.** This would serve to encourage greater crop diversification than we currently see in the land settled in the former desert areas of south west Afghanistan. Encroachment into these areas has largely been driven by the wealthy and powerful, who have also captured most of the benefits. Over time these lands have become concentrated with opium poppy largely due to the land-poor who have provided the necessary labour. Greater equity in land ownership could lead to increased cultivation of other legal crops as households look to balance the food needs of their family and livestock with their cash requirements.



## Annexes

## ANNEX A: Gross revenue, input costs, &amp; net returns, per jerib, US\$

	BALKH			HELMAND			KANDAHAR			NANGARHAR		
	Gross Revenue	Costs	Net Returns	Gross Revenue	Costs	Net Returns	Gross Revenue	Costs	Net Returns	Gross Revenue	Costs	Net Returns
	HH Labor	HH Labor	HH Labor	HH Labor	HH Labor	HH Labor	HH Labor	HH Labor	HH Labor	HH Labor	HH Labor	HH Labor
WINTER												
Wheat	278	110	122	342	114	124	313	99	115	213	88	107
Wheat (dasht, diesel)	-	-	-	217	192	196	218	167	171	50	-	-
Wheat (dasht, solar)	-	-	-	218	124	127	204	106	110	97	-	-
Poppy	1,329	188	405	1,408	283	603	1,749	250	648	1,100	270	742
Poppy (dasht, diesel)	-	-	1,142	1,335	408	729	1,291	337	657	955	-	-
Poppy (dasht, solar)	-	-	-	1,335	336	656	1,681	397	796	1,283	-	-
Chars	581	99	157	-	-	-	612	60	143	552	-	-
Melon	579	101	132	584	158	158	244	-	-	244	137	137
Watermelon	713	96	220	1,214	206	1,007	1,214	155	155	1,058	612	202
Tomato	338	54	72	272	115	154	243	122	152	121	149	191
Okra	515	51	110	-	-	-	336	-	-	336	151	151
Eggplant	-	-	-	-	-	-	272	116	116	156	196	264
Potato	-	-	-	408	139	139	-	-	-	-	76	76
Spinach	-	-	-	175	66	66	-	-	-	-	141	141
Cucumber	265	101	101	73	137	137	413	135	135	278	-	-
Green bean	1,441	42	31	-	-	-	476	65	65	411	111	121
Cauliflower	313	90	110	427	155	174	340	150	170	190	124	124
Gandana	-	-	-	874	155	175	1,031	95	112	936	447	323
Onion	600	104	148	-	-	-	-	-	-	-	192	314
Barley	150	-	-	-	-	-	-	-	-	-	151	181
Rice	-	-	-	-	-	-	169	18	30	150	-	-
Cotton	662	71	163	473	110	150	-	-	-	-	-	-
GARDENS												
Grapes	1,194	229	332	1,359	198	257	3,544	291	353	3,252	-	-
Anar	1,801	57	129	-	-	-	1,189	81	128	1,108	-	-
Almond	4,118	40	40	-	-	-	-	-	-	-	-	-
SUMMER												
Maize	149	53	104	192	85	85	165	64	64	101	66	66
Mongbean	136	61	74	211	59	59	89	59	68	30	44	44
Poppy	-	-	-	1,117	363	674	-	-	-	-	-	-
Chars	588	99	157	-	-	-	612	24	108	587	91	104
Melon	-	-	-	437	109	109	244	-	-	244	70	70
Watermelon	-	-	-	874	149	191	239	181	208	58	-	-
Basil	-	-	-	476	99	115	288	21	37	267	-	-
Tomato	338	54	72	272	115	154	243	122	152	121	151	151
Okra	515	51	110	-	-	-	-	-	-	-	196	264
Cucumber	588	101	101	388	153	153	388	135	135	253	-	-
Taro	-	-	-	-	-	-	-	-	-	-	106	113
Turnip	-	-	-	-	-	-	-	-	-	-	131	131
Sesame	240	47	47	249	50	50	-	-	-	-	-	-
Cotton	273	137	199	291	100	117	-	-	-	-	96	96
FALL												
Poppy	-	-	-	825	362	591	-	-	-	-	-	-
Cauliflower	-	-	-	-	-	-	-	-	-	-	101	101
Gandana	-	-	-	559	95	95	48	48	48	-	112	199
Onion	-	-	-	-	-	-	-	-	-	-	152	152
Garlic	-	-	-	-	-	-	125	125	125	-	81	81
Pea	-	-	-	-	-	-	-	-	-	-	152	152
Squash	-	-	-	-	-	-	-	-	-	-	61	61
Radish	-	-	-	-	-	-	164	164	178	-	181	181
Torshay	-	-	-	-	-	-	-	-	-	-	85	85

Notes: Data unavailable or limited for some crops.



## Annex B1: Returns to crops per jerib under land tenure &amp; labour assumptions, US\$

Province: Balkh

		NET RETURNS UNDER VARIOUS SCENARIOS									
	Gross Returns	COSTS WITH:		Owner cultivator		Sharecropper		50/50 HH labor	4/1 HH labor	6/5 HH labor	7/6 HH labor
		HH labor	Hired labor	HH labor	Hired labor	HH labor	4/1 HH labor				
Winter											
Wheat	278	110	122	168	156	77	69	110		116	
Opium poppy	1,329	188	405	1,142	924	534	332	702		734	
Chars	581	99	157	482	424	241	145	327		341	
Melon	579	101	132	479	448	239	145	351		365	
Watermelon	713	96	220	617	493	308	178	375		391	
Cotton	662	71	163	590	499	295	165	389		405	
Almond	4,118	40	40	4,077	4,077	2,039	1,029	3,391		3,489	
Grapes	1,194	229	332	965	862	482	299	663		691	
Onion	600	104	148	496	452	248	150	352		366	
Tomato	338	54	72	284	266	142	85	210		218	
Okra	515	51	110	464	405	232	129	319		332	
Cucumber	265	101	101	163	163	82	66	119		125	
Green bean	1,441	42	42	1,400	1,400	700	360	1,159		1,194	
Cauliflower	313	90	112	223	200	111	78	148		156	
Barley	150	-	-	150	150	75	38	125		129	
Gardens											
grapes	1,194	229	332	965	862	482	299	663		691	
anar	1,801	57	129	1,744	1,672	872	450	1,372		1,415	
almond	4,118	40	40	4,077	4,077	2,039	1,029	3,391		3,489	
Summer											
Maize	149	53	104	96	44	48	37	19		23	
Mongbean	136	61	74	75	62	38	34	39		43	
Chars	588	99	157	490	431	245	147	333		347	
Sesame	240	47	47	193	193	97	60	153		159	
Cotton	273	137	199	136	74	68	68	29		35	
Okra	515	64	123	451	392	225	129	306		318	
Cucumber	588	101	101	487	487	243	147	389		403	
Fall											

Notes: Data unavailable or limited for some crops.



## Annex B2: Returns to crops per jerib under land tenure &amp; labour assumptions, US\$

Province: Helmand

NET RETURNS UNDER VARIOUS SCENARIOS										
	Gross Returns	COSTS WITH:		Owner cultivator		50/50 HH labor	Sharecropper			7/6 HH labor
		HH labor	Hired labor	HH labor	Hired labor		4/1 HH labor	6/5 HH labor		
Winter										
Wheat	342	114	124	228	218	105	85	161		169
Wheat (dasht, diesel)	217	192	196	26	22	39	54	51		56
Wheat (dasht, solar)	218	124	127	95	91	53	55	78		83
Opium poppy	1,408	283	603	1,125	805	521	352	570		604
Opium poppy (dasht, diesel)	1,335	408	729	926	606	445	334	416		448
Opium poppy (dasht, solar)	1,335	408	729	926	606	445	334	416		448
Melon	584	158	158	427	427	199	146	329		343
Watermelon	1,214	206	206	1,007	1,007	473	303	805		834
Cotton	473	110	150	364	323	170	118	244		255
Tomato	272	115	154	157	118	72	68	73		79
Potato	408	139	139	268	268	124	102	200		210
Spinach	175	66	66	109	109	55	44	80		84
Cauliflower	427	155	174	272	253	136	107	182		192
Onion	874	155	175	718	699	337	218	553		574
Gardens										
Grapes	1,359	198	257	1,161	1,102	547	340	875		908
Summer										
Maize	192	85	85	107	107	49	48	75		79
Mongbean	211	59	59	152	152	71	53	117		122
Opium poppy (summer)	1,117	363	674	754	443	367	279	290		316
Sesame	249	50	50	199	199	93	62	158		164
Melon	584	158	158	427	427	199	146	329		343
Watermelon	1,214	206	206	1,007	1,007	473	303	805		834
Basil	476	99	115	377	361	176	119	282		293
Cucumber	73	137	137	34	64	64	18	75		76
Cotton (summer)	291	100	117	192	174	89	73	126		133
Fall										
Opium poppy(fall)	825	362	591	464	234	234	206	142		161
Gandana	559	95	95	465	465	232	140	371		385

Notes: Data unavailable or limited for some crops.



## Annex B3: Returns to crops per jerib under land tenure &amp; labour assumptions, US\$

Province: Kandahar

NET RETURNS UNDER VARIOUS SCENARIOS									
	Gross Returns	COSTS WITH:		Owner cultivator		Sharecropper		50/50 HH labor	7/6 HH labor
		HH labor	Hired labor	HH labor	Hired labor	HH labor	HH labor		
Winter									
Wheat	313	99	115	213	198	78	146	99	153
Wheat (dasht, diesel)	218	167	171	50	47	54	76	53	81
Wheat (dasht, solar)	204	106	110	97	94	51	83	61	88
Opium poppy	1,749	250	648	1,499	1,100	437	809	708	851
Opium poppy (dasht, diesel)	1,291	337	657	955	634	323	464	468	495
Opium poppy (dasht, solar)	1,681	397	796	1,283	885	420	633	614	673
Watermelon	1,214	155	155	529	0	885	0	303	0
Chars	612	60	143	552	468	153	366	276	381
Tomato	243	122	152	121	90	61	50	60	56
Eggplant	272	116	116	156	156	68	111	78	117
Onion	1,031	95	112	936	919	258	747	468	771
Cucumber	413	135	135	278	278	103	209	139	219
Green bean	476	65	65	411	411	119	331	205	343
Cauliflower	340	150	170	190	170	85	113	95	121
Rice	169	18	30	150	139	42	111	75	115
Gardens									
Grapes	3,544	291	353	3,252	3,191	886	2,601	1,626	2,685
Anar	1,189	81	128	1,108	1,061	297	863	554	891
Summer									
Maize	165	64	64	101	101	41	73	50	77
Mongbean	89	59	68	30	21	22	7	15	9
Chars	612	24	108	587	504	153	402	294	416
Watermelon	1,214	155	155	1,058	1,058	303	856	529	885
Basil	288	21	37	267	252	72	204	134	210
Tomato	243	122	152	121	90	61	50	60	56
Cucumber	413	135	135	278	278	103	209	139	219
Fall									

Notes: Data unavailable or limited for some crops.



## Annex B4: Returns to crops per jerib under land tenure &amp; labour assumptions, US\$

Province: Nangarhar

		NET RETURNS UNDER VARIOUS SCENARIOS									
	Gross Returns	COSTS WITH:		Owner cultivator		Sharecropper		50/50 HH labor	4/1 HH labor	6/5 HH labor	7/6 HH labor
		HH labor	Hired labor	HH labor	Hired labor	HH labor	HH labor				
Winter											
Wheat	291	88	107	204	184	97	73	136	143		
Opium poppy	1,490	270	742	1,220	748	564	373	500	535		
Tomato	350	151	151	198	198	82	87	140	148		
Okra	816	196	264	620	552	290	204	416	435		
Eggplant	194	76	76	118	118	54	49	86	90		
Potato	505	141	141	364	364	169	126	279	291		
Melon	340	137	137	202	202	93	85	146	154		
Watermelon	612	149	191	463	420	232	153	318	333		
Green bean	850	111	121	739	728	348	212	587	607		
Cauliflower	447	124	124	323	323	150	112	248	259		
Gandana	419	105	192	314	227	147	105	157	167		
Onion	746	151	181	595	564	279	186	440	458		
Gardens											
Summer											
Maize	155	66	66	89	89	41	39	63	67		
Mongbean	131	44	44	87	87	40	33	65	68		
Chars	1,456	91	104	1,365	1,352	646	364	1,109	1,144		
Melon	340	137	137	202	202	93	85	146	154		
Tomato	513	137	203	375	310	162	128	224	237		
Okra	728	191	259	537	469	250	182	348	365		
Cotton	206	96	96	110	110	44	51	75	80		
Taro	757	106	113	651	644	307	189	518	536		
Turnip	267	131	131	136	136	61	67	92	98		
Fall											
Cauliflower	670	101	101	569	569	268	167	457	473		
Gandana	559	112	199	447	360	210	140	267	280		
Onion	583	152	152	430	430	200	146	333	347		
Radish	361	85	85	277	277	129	90	216	225		
Garlic	388	81	81	307	307	144	97	243	252		
Squash	170	61	61	108	108	50	42	80	84		
Tarahay	361	85	85	277	277	129	90	216	225		

Notes: Data unavailable or limited for some crops.



# Treating the Opium Problem in World Bank Operations in Afghanistan

## Guideline Note

### A. Strategic Approach

#### The opium problem

Reducing opium production is one of the greatest challenges facing Afghanistan. Opium is central to the *macroeconomy*, contributing one third of GDP and significant support for aggregate demand and the balance of payments. In the *rural economy*, opium is a key livelihoods coping strategy for as many as 350,000 farm families, most of them poor. In the area of *security*, opium is fuelling warlordism and terrorism, and in *governance* the illegal economy is capturing or undermining state building efforts at all levels.

#### Government strategy

Government's strategy to reduce and ultimately eliminate opium from the Afghan economy comprises essentially three elements. The first is to *improve governance and the rule of law*, strengthening public institutions and mechanisms to control drugs, together with the development of responsible governance structures and the "social contract" at all levels from the community up. The second is to *raise the general level of economic activity and services*, improving living standards and providing social protection. The third is to *emphasize in development programs specific components that can have a significant impact on farmer behavior*, with a focus on poorer farmers, laborers, and more vulnerable areas.

#### World Bank approach

With this background, the World Bank's working approach to the opium problem is:

- to factor considerations of the opium problem into analysis and dialogue at all levels, including the macroeconomic dimension
- to support and engage in analytical work on the development dimensions of the drug problem in Afghanistan and associated options for addressing it
- to help support the development elements of the Government's strategy through Bank-financed programs as appropriate
- to ensure that the activities supported by the Bank do not inadvertently contribute in any way to the opium economy

#### Screening

Under this approach, the Bank proposes to screen all its activities in Afghanistan, both operations and analytical and advisory work, to ensure that counter-narcotics aspects are treated consistently and in a way that can make the maximum contribution to the national effort against drugs. The screening process will demonstrate to what extent the operation or activity:

1. Contributes to the governance agenda
2. Maximizes synergies to deliver broad livelihoods impacts at the community and household level
3. Maximizes more specific counter-narcotics impacts by geographical area coverage and by addressing the poorer target groups, with components which strengthen and diversify legal livelihoods
4. Identifies risks and develops an approach to ensure that Bank support "does no harm" and does not create risks to the Bank's reputation.
5. Contains a monitoring and reporting capability that can effectively track outcomes related to the opium economy.



## B. Understanding the Role of Opium in Livelihood Strategies

### and Devising Appropriate Development Responses

#### Reasons for the “success” of poppy cultivation in Afghanistan

In Afghanistan’s current economic and political climate there are many advantages to cultivating opium poppy. It is a high-value, low-weight, durable commodity, for which there is strong demand. There are sufficient returns at each stage of the value chain and well-developed market linkages in terms of credit, purchase, transport, and processing, all of which function well and flexibly despite Afghanistan’s fractured infrastructure. Traders are willing to purchase at the farm gate for cash, often in advance of the harvest.

Opium poppy can be cultivated almost anywhere in the country, although it grows best in free draining sandy loam soils. It is so well suited to Afghanistan’s agro-climatic conditions that it produces higher than the global average yields of raw opium and morphine and maximizes returns to scarce irrigation water. This latter attribute and its marketability have proven crucial to farmers with small landholdings and large families, particularly in remote areas where opium poppy cultivation is becoming increasingly concentrated. For small marginal farmers there is no other crop under current conditions that can provide the same returns; when opium declines in those areas, the opportunities for farm income for such households will also decline, driving people off the land.

With these characteristics - and despite law enforcement efforts - opium poppy is a relatively low risk crop in what is generally a high-risk environment - for both farmers and traders. The traditional credit system known as *salaam*, that provides an advance payment on an agreed amount of a future crop, has increasingly favoured opium poppy cultivation over other crops. In areas in which opium poppy has become entrenched, access to credit has become dependent on a farmer’s willingness to cultivate this crop. This willingness and the possession of the requisite skills to cultivate opium poppy have increasingly determined sharecroppers’ access to land. The rental value of land also has become determined by potential opium yields rather than by wheat productivity.

#### Uneven distribution of the considerable benefits of opium production

The economic advantages associated with cultivating opium poppy differ according to the assets farmers have at their disposal. For the relatively few large landowners, opium poppy represents a high-value crop that can accrue even greater value if it is not sold immediately after the harvest season but later on, when prices rise. As larger farmers have other income streams and liquid assets, they can realize higher prices by selling later in the year. Moreover, landlords who make sharecropping arrangements for opium production can do even better: some inequitable sharecropping arrangements allow the landowner to take two thirds of the final opium yield, despite contributing only 20% of the total cost of production. Landlords may also make advance purchases of opium at rates considerably less than the harvest price, generating further considerable profits on the opium crop. These profits can then be reinvested in further diversifying assets and income sources or in the opium trade itself - an ascending spiral of wealth accumulation for larger landowners.

The position for the land-poor is quite different. For this group, opium poppy is not just a source of income. Opium poppy cultivation increases the opportunity to obtain land on a sharecropping or tenancy basis and draws on the labor supply of the household. It provides access to both cash income from opium poppy and, in the typical mixed cropping system practiced in Afghanistan even among poppy growers, to the means of producing food crops for household consumption. Without opium poppy cultivation, the opportunity to access land diminishes considerably, as happened in the province of Nangarhar in 2004/05.



Opium poppy cultivation also creates a demand for itinerant labor to assist in the weeding and harvesting of the crop. Based on UNODC's estimate that 104,000 hectares of opium poppy were cultivated in the 2004/05 growing season, the crop would have generated approximately 36.4 million days of employment, of which one-third would have been daily wage labor opportunities. Where a household has more than one male able to follow the staggered weeding and harvesting seasons, the off-farm income generated from opium poppy can last up to five months and is typically higher than the on-farm income earned from cultivating the crop as a sharecropper.

Opium poppy also provides an important source of credit for the resource-poor. In areas where opium cultivation is entrenched, it defines the "creditworthiness" of the land-poor. Without it, access to basic food items, agricultural inputs, and funds for health care becomes severely constrained.

In addition to the above direct benefits, the cultivation and trade of opium has considerable multiplier effects in the rural economy. Some estimates even suggest that for every hectare of opium poppy cultivated, as many as 5-6 jobs are created in the rural non-farm economy.

### **Typology of opium farmers**

For the purposes of this Guideline, rural households involved in the opium economy have been classified as (1) "better off" and not dependent; (2) less affluent but not dependent; and (3) poor and highly dependent. As a general rule, Class (1) "better off" farmers have more diversified livelihood strategies. They reside in areas in close proximity to provincial or district centers, they cultivate a variety of crops including high-value horticulture, and they have better access to land and irrigation, and to the commodity and labor markets. They are not dependent on opium for a decent living and could be considered to be "opportunistic producers", for whom application of the law is the primary instrument of drug control. More marginal farmers (Class 2) and the poor (Class 3, landless or with very small landholdings) are considered to be the target group for development programs that aim at contributing to the reduction of drug production. As such, poverty reduction and opium poppy reduction strategies are closely entwined. The characteristics of these three classes are summarized in Table 1.

### **Appropriate development responses**

Opium poppy cultivating households are diverse and dynamic, and their decision as to how much land to dedicate to opium is influenced by a range of different factors - not just price. Policies and programs that treat opium poppy farmers as homogenous will not only be ineffective, they could prove counterproductive. It is necessary to work with the diversity that exists among opium poppy cultivators. Understanding the contribution of the different socio-economic groups involved in opium poppy cultivation and the multiple benefits (for example social, economic, and political) they derive from their involvement are critical for identifying the entry points for developing effective strategies for the sustainable elimination of the crop in Afghanistan.



Table 1: Typology of Opium Producing Areas and Farmers within Them

	Class 1 Not Dependent	Class 2 Dependent	Class 3 Highly Dependent
Access to markets/ services/ governance	<ul style="list-style-type: none"> <li>Close to district and provincial centers</li> <li>Government can impose will with minimum reaction</li> </ul>	<ul style="list-style-type: none"> <li>Accessible but limited physical infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>Remote</li> <li>Government presence and service delivery limited</li> <li>Government finds difficult to impose will beyond district centre</li> </ul>
Land cultivated (winter+summer)	<ul style="list-style-type: none"> <li>Larger cultivable land (&gt;15 jeribs)</li> </ul>	<ul style="list-style-type: none"> <li>Medium sized (&gt;7.5 &lt;15 jeribs)</li> </ul>	<ul style="list-style-type: none"> <li>Small cultivable &lt;7.5 jeribs)</li> </ul>
Irrigation	<ul style="list-style-type: none"> <li>Canal or main river</li> </ul>	<ul style="list-style-type: none"> <li>Canal and river but also karez and mountain spring</li> </ul>	<ul style="list-style-type: none"> <li>Karez and mountain spring,</li> </ul>
Land Tenure	<ul style="list-style-type: none"> <li>Landlord</li> <li>Owner cultivator</li> </ul>	<ul style="list-style-type: none"> <li>Owner cultivator</li> <li>Tenant</li> </ul>	<ul style="list-style-type: none"> <li>Owner cultivator</li> <li>Sharecropper</li> </ul>
No. of Crops	<ul style="list-style-type: none"> <li>Double Crop</li> </ul>	<ul style="list-style-type: none"> <li>Double Crop but limited in summer</li> </ul>	<ul style="list-style-type: none"> <li>Single Crop</li> </ul>
Cropping	<ul style="list-style-type: none"> <li>Diversified</li> <li>Poppy 30%-50%.</li> <li>wheat</li> <li>vegetable for sale</li> <li>Fruit/nuts for sale</li> </ul>	<ul style="list-style-type: none"> <li>Poppy 50%+</li> <li>Wheat</li> <li>Vegetables -some for sale</li> <li>Fruit/nuts -some for sale</li> </ul>	<ul style="list-style-type: none"> <li>Poppy 70%+</li> <li>Wheat 20-30%</li> <li>vegetable solely for consumption</li> </ul>
Population density	<ul style="list-style-type: none"> <li>1 -1.5 per jerib</li> </ul>	<ul style="list-style-type: none"> <li>2 -3 per jerib</li> </ul>	<ul style="list-style-type: none"> <li>3.5 to 5 per jerib</li> </ul>
Livestock	<ul style="list-style-type: none"> <li>Sale of dairy products and cattle</li> </ul>	<ul style="list-style-type: none"> <li>Some sale of dairy products</li> </ul>	<ul style="list-style-type: none"> <li>Goats/sheep</li> <li>Dairy cow for milk products for household</li> </ul>
Off farm	<ul style="list-style-type: none"> <li>Limited</li> </ul>	<ul style="list-style-type: none"> <li>Daily wage labor - poppy during harvest</li> </ul>	<ul style="list-style-type: none"> <li>Daily wage labor - mainly poppy throughout season</li> </ul>
Non Farm	<ul style="list-style-type: none"> <li>Salaried (NGO, Govt), trade, transport</li> </ul>	<ul style="list-style-type: none"> <li>Construction</li> <li>Semi Skilled</li> </ul>	<ul style="list-style-type: none"> <li>Limited</li> </ul>
Credit	<ul style="list-style-type: none"> <li>Accumulated debt marginal</li> <li>Variety of sources of credit</li> <li>Gives loans</li> </ul>	<ul style="list-style-type: none"> <li>Some accumulated debts</li> <li>Variety of sources</li> </ul>	<ul style="list-style-type: none"> <li>Accumulate debts significant as proportion of total income</li> <li>Opium only source of loans</li> </ul>
Opium Sales	<ul style="list-style-type: none"> <li>Some time after harvest</li> </ul>	<ul style="list-style-type: none"> <li>Pre harvest but some surplus</li> </ul>	<ul style="list-style-type: none"> <li>Pre harvest</li> </ul>

Development programs that offer farmers real livelihoods alternatives would need to have as many characteristics as possible that “mimic” the attractions of the opium economy, particularly for smaller and poorer farmers and laborers (Classes 2 and 3), for whom choices are very limited at present. Programs need to avoid adopting a strategy of simply attempting to replace the relatively high level of income from opium that accrues to the resource-rich (Class 1 farmers). Interventions are needed that improve the access of smaller farmers (Class 2 and 3) to those assets which they currently have access to only through their willingness to produce opium poppy. **Improving access to credit, land, and off-farm and non-farm income opportunities for the poor should be a priority.** Table



2 lists some of the development responses that should be emphasized to address the situation of these Class 2 and 3 farmers. For farmers who are not economically reliant on opium poppy cultivation (i.e. Class 1 farmers), greater emphasis should be given to applying social and legal pressure.

**Table 2: Development Responses to Counterbalance the Advantages of Opium for the Rural Economy**

Asset	Advantages of the opium economy	Development responses
<b>Land</b>	<ul style="list-style-type: none"> <li>• Preferential access to land for sharecroppers with experience of poppy cultivation</li> <li>• Only poppy can pay the high land rents: in areas where poppy is concentrated the rentable value of land is inflated to such a point that farmers cultivating legal crops would not be able to meet their rent</li> <li>• High returns per unit of land, preferred crop for those with limited land holdings.</li> </ul>	<ul style="list-style-type: none"> <li>• Increase agricultural land under irrigation (winter and summer seasons)</li> <li>• Promote high-value horticulture and cottage level agro processing to provide value added</li> <li>• Increase income from livestock and by-products</li> <li>• Develop non-farm income opportunities, for example through skills development and development of market linkages</li> </ul>
<b>Water</b>	<ul style="list-style-type: none"> <li>• High return per unit of water, poppy particularly attractive in single crop areas</li> <li>• One of few crops to meet capital and recurrent costs of tubewells</li> </ul>	<ul style="list-style-type: none"> <li>• Increase agricultural land under irrigation (summer and winter)</li> <li>• Integrated approach to improving value added in farming through water efficient techniques/technologies and high value added production packages</li> </ul>
<b>Credit</b>	<ul style="list-style-type: none"> <li>• Advance payment on future crop facilitates purchase of agricultural inputs</li> <li>• Those that cultivate opium poppy, particularly the resource poor, are considered 'creditworthy'. They can access credit, including consumption credit, and are able to repay both seasonal and outstanding loans</li> </ul>	<ul style="list-style-type: none"> <li>• Advance payments on other crops (orchards, onions, cumin) sometimes available, promote market linkages</li> <li>• Contract growing, including provision of agricultural inputs</li> <li>• Improve credit opportunities for consumption and investment through MISFA</li> </ul>
<b>Labor</b>	<ul style="list-style-type: none"> <li>• Labor-intensive crop, significant labor opportunities created during weeding and harvesting periods</li> <li>• Maximizes use of unremunerated family labor, including women</li> <li>• Sharecroppers receive greater share of final crop when they cultivate opium than they do for legal crops</li> <li>• Food provided for those harvesting opium poppy</li> </ul>	<ul style="list-style-type: none"> <li>• Develop labor- intensive agro processing opportunities such as in dried fruit</li> <li>• Raise opportunity cost of family labor through expanding potential income earning opportunities for women, including livestock, poultry, dairy, agro processing, etc</li> <li>• Develop non farm income opportunities</li> <li>• Cash For Work during periods of peak labor demand in areas where strong law enforcement against cultivation is occurring</li> <li>• Improve access to agricultural inputs for sharecroppers to allow greater share of larger final yield of legal crops .</li> </ul>



In addition to the development responses that may directly offer income-earning opportunities to poor farm families, much might be done to improve governance and so develop responsible reciprocity between rural communities and the state. The spread of efficient and responsive delivery of services like health and education, and the development of counterpart community structures like parent-teacher associations, increase respect for the Government's development capability, build responsible local community social capital, and open paths for dialogue on the drugs issue. In addition, specific programs like education, health, and the National Solidarity Program may offer multiple entry points for education and dialogue and for the building of trust and good governance. ***The problem of opium is thus a consideration that may be factored in across a whole range of development activities in rural areas.***

Finally, institutional development at the broader level - for example strengthening the central and local administration or improving institutions and mechanisms in specific sectors bearing on the opium economy, such as financial services (e.g. anti-money laundering actions) - can support the Government strategy to improve governance and thereby control drugs. ***Many aspects of governance and institutional development at the broader level can thus have an impact on the opium economy.***

## C. Implementing Counter-Narcotics Screening for Bank Activities

This section sets out a checklist for screening Bank activities, assesses the benefits to be gained, and discusses institutional responsibilities for implementation.

### The checklist

The following eight questions provide an analytic framework for screening Bank activities. The questions are designed to highlight how activities may contribute to the counter-narcotics effort, and also to underline any risks that need to be managed.

1. **How does the activity touch the target population or areas?** Review the activity description and assess the "interface" with the opium economy in terms of the target population, the causes of cultivation, the type of actions envisaged, and the targeting, timing, and geographical location in relation to opium production.
2. **Does the activity promote governance and institution building?** Do governance and institution building under the activity create the possibility at some stage of development of responsible interaction between the state and the population on the subject of drugs? Within the governance and institutional set-up of the activity, is there scope to conduct dialogue or transmit information, provide education, and engage in communication about drugs? What measures could improve the impact on governance?
3. **Is there an impact on the standard of living and on livelihoods in general?** Does the activity contribute to improvements in living standards and incomes in drug producing areas or "vulnerable" areas? What measures could improve the impact on the standard of living? Is the activity coordinated with other development efforts to avoid overlap or gaps and to achieve a critical mass of impacts on livelihoods at the local level that would increase the attractiveness of licit activity over opium production?
4. **Are there direct impacts on the target population?** Are components of the activity likely to directly affect actual or potential drug-producing households, and are these components adapted to maximize the chances of raising the opportunity cost of opium poppy cultivation and providing an alternative to opium? How can direct impacts be optimized? Is there a case for targeting actual or "at risk" opium producing areas and households by selection of project areas that are growing or at risk of growing opium, or by modifying the components to address the production systems of those engaged in the opium economy - or who might be? Is such targeting desirable, and if so, is it feasible?
5. **Is there a risk of harm?** Is there a risk that the activity may promote drug production and how can that risk be managed? Could interventions be timed, targeted, and coordinated with other initiatives to reduce this risk?



6. **Do monitoring, evaluation, and reporting capture outcomes?** How would any agreed contribution of the activity to national drug control objectives be monitored and evaluated? How could an understanding of the movement from illicit to licit livelihoods be used to inform both operations and policy? How would any emerging risks be captured and reported?
7. **Overall, does the activity contribute to Afghanistan's counter-narcotics effort?** Overall, to what extent does the activity contribute to Afghanistan's strategy to reduce and ultimately eliminate the opium problem?
8. **Can more impact be obtained through the activity?** What solutions could increase the contribution of the activity to Afghanistan's fight against drugs? At what cost could those impacts be obtained, and what operational changes would be required?

## Examples

For an illustration of the use of this checklist, see the four annexed examples:

Annex 1 summarizes the case of the *Emergency Horticulture and Livestock Project* which was approved by the Bank Board in May 2006. On the basis of the analysis, a set of guidelines for implementation was agreed with government, together with recommendations for the design of subsequent operations within the broader national program in the future.

In the case of the *Emergency Irrigation Rehabilitation Project* (Annex 2), a series of operational changes were made to the project, with government agreement, at the mid-term review in April, 2006. These included: (1) a survey of sites to assess whether opium poppy is grown and a dialogue with the communities on how the potential for increased opium cultivation will be managed; (2) a signed Memorandum of Understanding with the communities committing not to cultivate opium poppy; (3) piloting of high-value alternative crops; and (4) inclusion in the M&E system of poppy monitoring, in coordination with UNODC.

Two more summary analyses were conducted in 2004 for the *Education Quality Improvement Program* (EQUIP, Annex 3) and the *Health Sector Emergency Reconstruction and Development Project* (Annex 4). The recommendations have been discussed with the Government but so far have not been implemented.

## Benefits

It is expected that the approach outlined above can contribute materially to Afghanistan's efforts to combat drugs. In addition, development effectiveness should be increased by taking the opium economy into account, because of its strong links to Bank development goals of poverty reduction, governance building, and sustainability. Reputational risk will also be better managed. Finally, a lead from the Bank will provide a model that the Government and other donors can follow.

## Institutional responsibilities, scope, and key stages

Within the region, the Operations Advisor for Afghanistan will be responsible for guiding teams in the completion of the checklist and in formulating appropriate changes to activities. Advice will be provided by SASPR as needed based on past and ongoing analytical work on the opium economy. It is expected that the checklist should be applied to all activities, both investment operations and analytical and advisory activities. For investment operations, an initial screening would normally be carried out upstream at concept review stage. Thereafter, the analysis and reporting would be conducted, as appropriate, through appraisal and supervision. "Opium compliance" will form one aspect of the review of readiness for entry to the program.



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Haji Yacoub toward Charahi Shaheed,  
First block on the right Shahr-i-Naw  
Kabul, Afghanistan  
Phone: +93 (0) 799 608 548  
Email: [areu@areu.org.af](mailto:areu@areu.org.af)  
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