UNODC
United Nations Office on Drugs and Crime

Islamic Republic of Afghanistan
Ministry of Counter Narcotics

# Sustainable development in an opium production environment

## Afghanistan Opium Survey Report 2016

MAY 2017

UNODC Research

MCN/NSD
Narcotics Survey Directorate

**ACKNOWLEDGEMENTS**

The *Afghanistan Opium Survey 2016* was prepared by the Research and Trend Analysis Branch (RAB), Division for Policy Analysis and Public Affairs (DPA), United Nations Office on Drugs and Crime, under the supervision of Jean-Luc Lemahieu, Director of DPA and Angela Me, Chief of RAB.

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The implementation of the survey would not have been possible without the dedicated work of the field surveyors, who often faced difficult security conditions.

The MCN/UNODC Illicit Crop Monitoring activities in Afghanistan were made possible by financial contributions from the United States of America and the Government of Japan.

# 1 Introduction

The *Afghanistan Opium Surveys* are implemented annually by the Ministry of Counter Narcotics (MCN) of Afghanistan in collaboration with the United Nations Office on Drugs and Crime (UNODC). The survey team collects and analyses information on the location and extent of opium poppy cultivation, potential opium production and the socio-economic situation in rural areas. Since 2005, MCN and UNODC have also been involved in the verification of opium eradication conducted by provincial governors and opium-poppy-eradication forces. The results provide a detailed picture of the outcome of the 2016 opium season and, together with data from previous years, enable the identification of medium- and long-term trends in the evolution of illicit opium poppy cultivation in Afghanistan. This information is essential for planning, implementing and monitoring the impact of measures required for tackling a problem that has serious implications for Afghanistan and the international community.

The opium survey is implemented within the technical framework of the UNODC Illicit Crop Monitoring Programme (ICMP). The objective of ICMP is to assist the international community in monitoring the extent and evolution of illicit crops in the context of the Plan of Action adopted by the United Nations (the 53rd session of the Commission on Narcotic Drugs in March 2009). Under ICMP, monitoring activities currently supported by UNODC also exist in other countries affected by illicit crop cultivation: in Asia, the Lao People's Democratic Republic and Myanmar; in Latin America, Colombia, Ecuador, Mexico, Peru and the Plurinational State of Bolivia; in Africa, Nigeria.

The *Afghanistan Opium Survey 2016* was implemented under project AFG/F98, "Monitoring of Opium Production in Afghanistan", with financial contributions from the Governments of Japan and the United States of America.

# 2 Key findings

The important linkages between illicit drug production and development are increasingly being acknowledged by the international community. The UNGASS[1] outcome document recognizes that the efforts to achieve the Sustainable Development Goals and effectively address the drug problem are complementary and mutually reinforcing. This report aims to improve the understanding of the different challenges that opium poppy cultivation poses on the sustainable development agenda in Afghanistan, as well as to provide evidence to assist building resilience in rural communities to opium poppy cultivation.

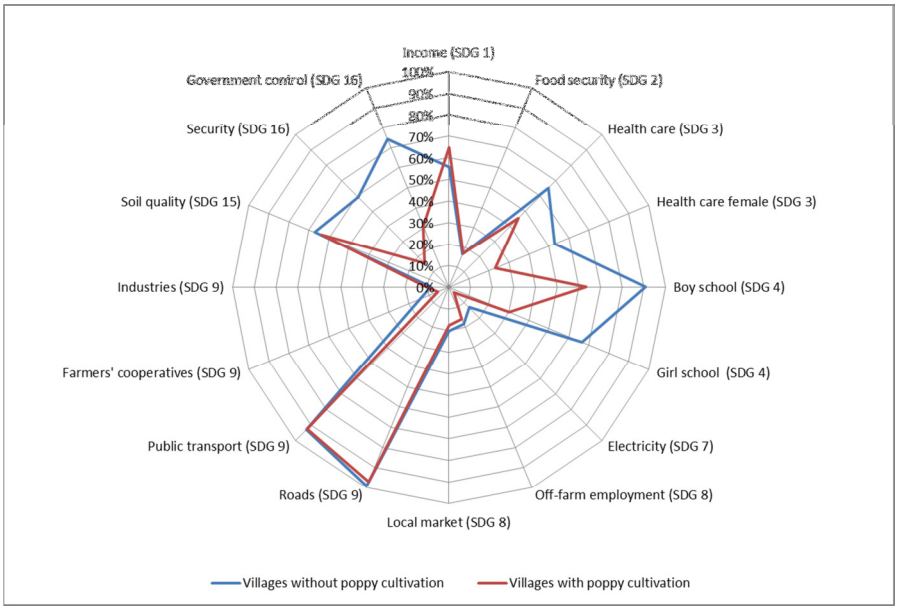
- In 2016, the total area under opium poppy cultivation in Afghanistan increased by 10 per cent when compared to the previous year, from 183,000 hectares to 201,000 hectares. Potential opium production in 2016 was estimated at 4,800 tons, an increase of 43 per cent from its 2015 level (3,300 tons). The increase in opium production is partly a result of the increase in the total area under opium poppy cultivation, but more importantly, of higher opium yield per hectare.
- The largest relative increases took place in the Northern and North-eastern regions, which can be attributed to an increase in the average area of opium poppy cultivation by farmer there, and by the fact that more farmers were engaging in cultivation.
- The impact of illicit drug cultivation and production on economic, environmental and social development in Afghanistan, one of the poorest countries world-wide, is multifaceted. Not only has it led to the creation of an illicit economy that in many provinces permeated the rural society to the extent that many communities have become dependent on the income from opium poppy. It has also created challenges related to agricultural productivity due to occasional careless land management, and it has created social and economic costs associated with the consumption of opiates for drug users and their families and for society in general.
- At some 16 per cent of GDP, the value of opiates produced in Afghanistan continued to be of considerable size when compared to Afghanistan's licit economy in 2016 and was worth more than two-thirds of the entire agricultural sector of the country. The value of the illicit opiate economy was estimated at US$ 3.02 billion in 2016 (US$ 1.56 billion in 2015). The increase was caused by the significantly higher level of opium production - 43 per cent more than in 2015 - together with a growth in heroin prices in neighbouring countries.
- A considerable share of the rural population is affected by opium poppy cultivation. In 2016, opium poppy was cultivated in about one in three villages. In some areas, the concentration was much higher. In the Eastern region, opium poppy cultivation was reported in half of the villages; in Hilmand province, in almost 90 per cent.
- Opium harvesting (lancing) provides daily wage labour to temporal workers, who are among the most vulnerable groups to poverty and food insecurity. In 2016, opium poppy cultivation provided daily wage labour for an estimated 47 million person days or an equivalent of 235,100[2] full time jobs. The combined wages for opium poppy labour amounted to US$ 396 million, or 44 per cent of the farm-gate value of opium.
- The sales of opium poppy and derivatives constituted the main source of income of farmers who cultivate opium poppy frequently;[3] accounting for, on average, 57 per cent of the annual household income. Farmers who cultivate opium poppy infrequently[4] earned 36 per cent of their household income from opium poppy, almost as much as their earnings from other, licit crops (38 per cent).
- The potential of opium poppy cultivation to sustainably improve the livelihoods of farmers seems to be limited. On the one hand, opium poppy farmers did report higher cash incomes than other types of farmers, which may provide more flexibility in the

[1] UNGASS (2016), Resolution A/RES/S-30/1 containing outcome document entitled *"Our joint commitment to effectively addressing and countering the world drug problem"*.
[2] Full time job assumed to have 200 working days a year.
[3] Opium poppy farmers in 2016 who had cultivated opium poppy in at least four of the five years between 2011 and 2015.
[4] Opium poppy farmers in 2016 who had cultivated opium poppy in less than four of the five years between 2011 and 2015.

allocation of assets to cope with shocks like food insecurity. The income from opium was, however, mostly used for covering basic needs such as food or medical expenses. Only a few farmers mentioned to invest the income in assets such as agricultural tools or land that may have potential to generate long-term alternatives to opium poppy cultivation.

- Moreover, farmers' dependency on opium poppy cultivation is in many cases not simply related to the income generated by opium sales, but rather to the lack of sustainable access to both physical and economic markets for selling alternative products, and to the overall limited opportunities of villages in terms of social and economic development, governance and security. Opium poppy cultivation took place predominantly in areas with more limited access to infrastructure and services which are essential for the well-functioning of society, as well as greater challenges to attain more broadly defined development goals, such as security and government control.
- Comparing villages affected by opium poppy cultivation in 2016 with villages that were not affected by looking at progress towards selected Sustainable Development Goals indicators revealed a 'development gap' largely due to opium poppy cultivation status.
- The most pronounced development gap could be found in indicators related to health (SDG 3), education (SDG 4), as well as government control and security (SDG 16). Of the indicators considered, the link between opium poppy cultivation and absence of government control was the strongest.

**Selected indicators related to the SDGs and attainment status of villages (percentage of villages), by opium poppy cultivation status, 2016**




*Note: a detailed description of all indicators is in the methodology section 5.2.*

- Access to health care facilities, schools and security were strongly linked with government presence, as well, indicating that the lack of government control may be an explanatory factor for the development gap. In terms of cash income[5] opium-poppy villages had an advantage when compared to non-opium-poppy villages.

**Implications for policy**

- Good security conditions and stable governance are associated with less opium poppy cultivation. The development of physical and social infrastructure, in particular related to SDG 3 "Good health and Well Being" and SDG 4 "Quality education", as well as enhancing security and government control are needed for a sustainable reduction of opium poppy cultivation in Afghanistan.

[5] This indicator is presented as percentage of villages with an average farmer cash income above the international threshold of extreme poverty in the graph visualising the development gap.

- Farmers have complex livelihood strategies and their decision to cultivate opium poppy is driven by a range of economic, environmental and social circumstances. Agricultural initiatives need to take into account the pressure on land, soil degradation and water management, as well as distinct local characteristics such as the average size of landholdings and availability of infrastructure.
- The significant number of persons working for daily wages in opium poppy cultivation need to find opportunities in the licit labour market, which calls for programmes that address the needs of this group of often landless persons.
- The village surveys have shown that opium poppy cultivation predominantly took place in areas where women and girls had lower access to education and health services than at the national level. Improving basic social services in these areas through alternative development can thus increase gender equality.
- Including women into the work force more decisively and providing more income-generating opportunities for women can reduce the dependency of households on illicit crop cultivation, in addition to empowering women to participate more in the decision-making processes of households.
- The diversity of conditions and factors associated with the different levels of development and opium poppy cultivation need to be acknowledged and taken into account in the elaboration of local alternative development policies, as indicated in the UN Guiding Principles on Alternative Development.
- The socio-economic, cultural and biophysical diversity in the country requires adaptive approaches that consider local circumstances and conditions in all stages of programme development. Long-term political and financial support is essential to the success of alternative development. Direct participation by farmers and communities plays a key role in the design and planning of alternative development activities, especially in areas where no public institutions can fulfil such a role.

# 3 Challenges for achieving the Sustainable Development Goals in an opium poppy cultivation environment

The different aspects of Afghanistan's opiate problem are intricately linked with a range of social, economic and environmental issues. These linkages have a significant impact on development efforts, and in turn, the evolution of the illicit drug situation.

The importance of the interaction between illicit drug production and development is increasingly being recognized by the international community, as reflected in the discussions on the Sustainable Development Goals and the special session of the General Assembly on the world drug problem held in 2016 (UNGASS). The UNGASS outcome document recognizes that the efforts to achieve the SDGs and effectively address the drug problem are complementary and mutually reinforcing.[6] To support the implementation of the Sustainable Development Agenda and to support the Afghan Government in its efforts for the Transformation decade,[7] a better understanding of the links between poverty, illicit drug cultivation, production and trafficking is required.[8]

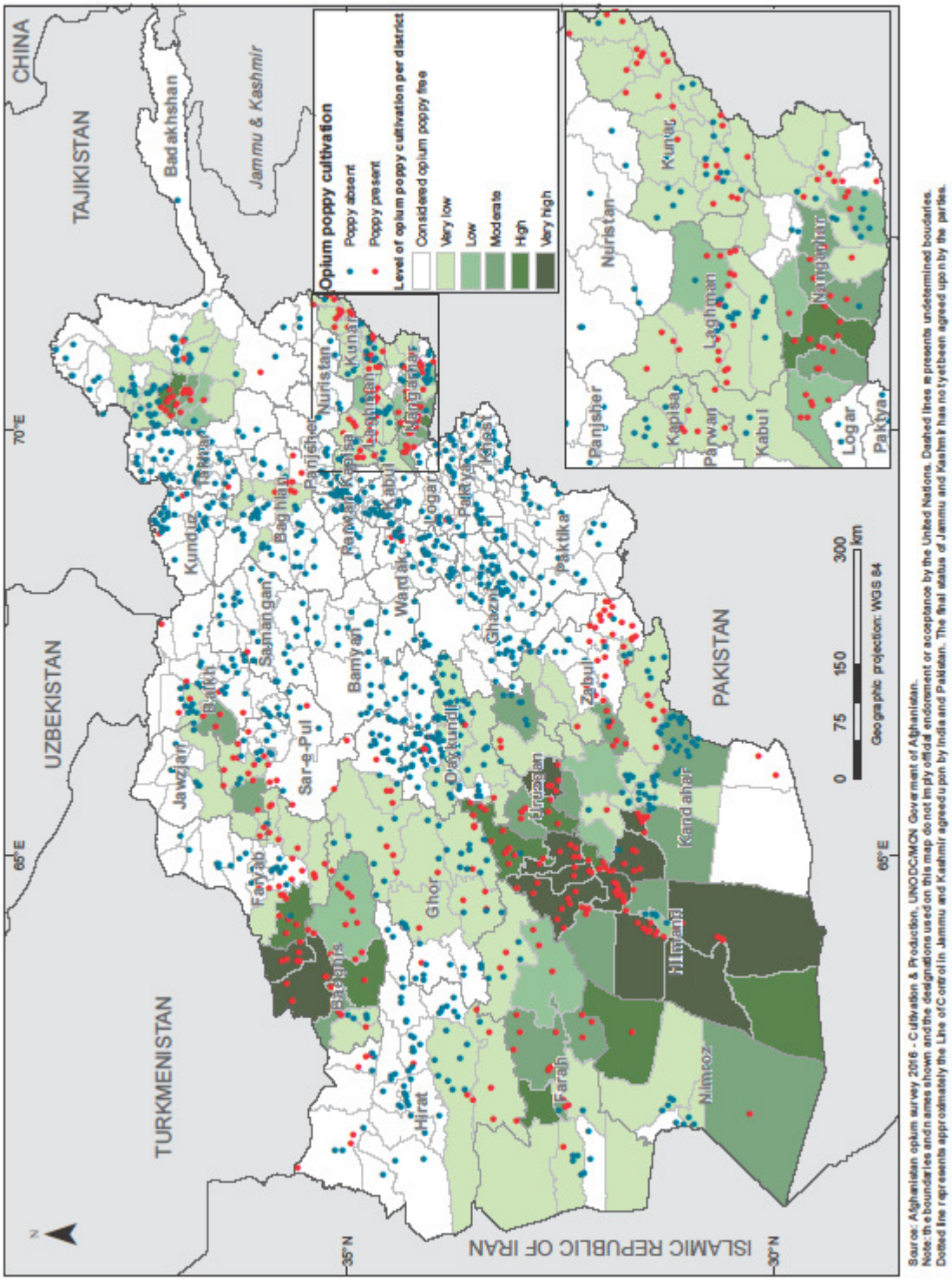
The significant levels of opium poppy cultivation and illicit trafficking of opiates have created multiple challenges for Afghanistan, as it has fuelled instability, insurgency and terrorist groups, as well as drug consumption. The livelihoods of many Afghans depend on the opium economy, through engaging in cultivation, working on poppy fields or in the illicit drug trade. There is also a shared international responsibility for the opiate problem in Afghanistan, with billions of dollars in profits made from trafficking of opiates to major consumer markets world-wide, and with hundreds of tons of precursor chemicals being diverted from licit international markets and smuggled into the country each year.

In 2016, the total area under opium poppy cultivation in Afghanistan increased by 10 per cent, from 183,000 hectares to 201,000 hectares when compared to the previous year. Potential opium production in 2016 was estimated at 4,800 tons, an increase by 43 per cent from its 2015 level (3,300 tons).

In this context, this report aims to improve the understanding of the different challenges that opium poppy cultivation poses on achieving the SDGs, as well as to provide evidence to assist building resilience in rural communities to opium poppy cultivation. The report is based on the findings of a socio-economic survey[9] in 1,471 opium poppy growing and non-growing villages which constituted a representative sample of rural areas in Afghanistan. The report gives indications on how a mix of alternative development[10] and law enforcement interventions can help reduce opium poppy cultivation and achieve the SDGs.

[6] UNGASS (2016), Resolution A/RES/S-30/1 containing outcome document entitled *"Our joint commitment to effectively addressing and countering the world drug problem"*.
[7] Afghanistan's Transformation Decade (2015-2024); http://mfa.gov.af/en/page/6547/transformation-decade2015-2024
[8] UN Economic and Social Council (2016). Progress towards the Sustainable Development Goals.
[9] A total of 3,538 interviews was conducted in March/April 2016; out of these 2,121 interviews were with farmers and 1,417 interviews with village headmen.
[10] The specific purpose of alternative development in its present, broader meaning is to contribute to economic development (especially in rural areas) in order to target the underlying factors and root causes of illicit drug economies (UNODC, 2015; "*World Drug Report"*)

**Map 1: Villages visited during the MCN/UNODC opium poppy village survey by opium poppy cultivation status as reported by village headmen , 2016**




Source: Afghanistan opium survey 2016 - Cultivation & Production, UNODC/MCN Government of Afghanistan.
Note: the boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Dashed lines represents undetermined boundaries.
Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

## 3.1 Impact of the drug cultivation and production on economic development

### 3.1.1 The role of the opiate economy in Afghanistan


The economic impact of illicit drug cultivation and production on economic development in Afghanistan, one of the poorest countries world-wide, is multifaceted. Opiates have created an economy based on illicit activities that in many provinces have permeated the rural society to the extent that many communities – not only farmers – have become dependent on the income from opium poppy to sustain their livelihoods. The illicit economy discourages private and public investment by fuelling insecurity, violence and insurgency, and creates costs associated with the consumption of opiates for individual drug users and their families, and for the society in general.

The macroeconomic impact of the illicit opiate economy depends, in particular, on how much of its proceeds actually enter the Afghan economy and how this is allocated between consumption of domestic and imported goods and services, investment and savings. The illicit opiate economy is not recorded in the national accounts and the extent to which the income generated from opium and its products feeds into licit GDP growth is unknown.

At some 16 per cent of GDP,[11] the net value of opiates, including revenues from heroin production and trafficking to the border, was of considerable size when compared to Afghanistan's licit economy in 2016, and even exceeded the value of the licit export of goods and services (7.3[12] per cent of GDP in 2015). It was worth more than two-thirds of the entire agricultural sector of the country, which constituted 22 per cent[13] of GDP in 2015/2016. An increase of opium production by 43 per cent together with a growth in heroin prices in neighbouring countries almost doubled the value of the opiate-related economy when compared to last year. The gross value of the Afghan opiate economy was estimated to be US$ 3.02 billion[14] in 2016 (US$ 1.56 billion in 2015).

**Table 1: Estimated gross and net values of the opiate economy, 2016**

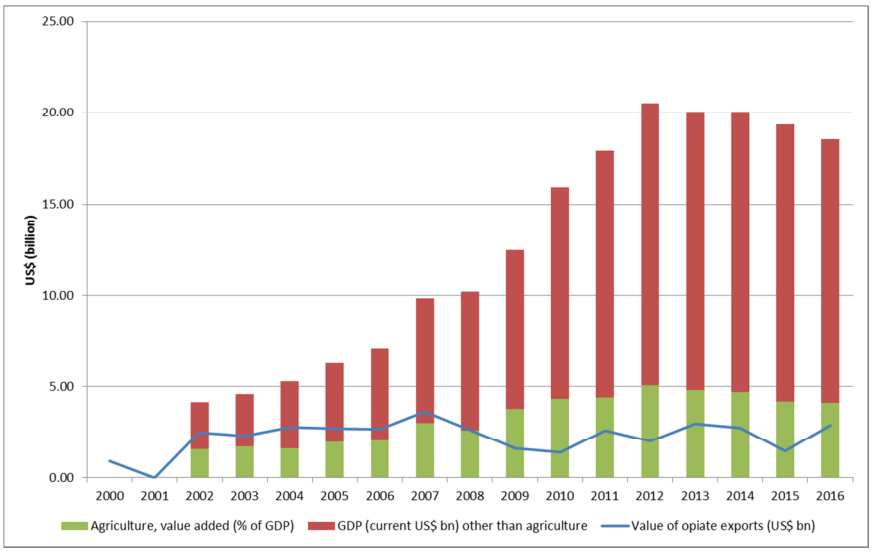
| | Gross value US$ (rounded) | Net value US$ (rounded) | Net value in relation to GDP |
|---|---|---|---|
| **Value of the opiate economy** | 3.02 billion (2.6-4.0 billion) | 2.9 billion (2.7-3.2 billion) | 16% |
| **Value of opiates potentially available for export** | 2.92 billion | 2.82 billion | 15% |
| **Farm-gate value of opium** | 898 million | : | 5%* |
| **Value of the domestic use market** | 105 million | 101 million | 0.5% |
| **Export value of 1 kg of opium** | 688 | : | : |

*Note: Ranges are calculated based on different assumptions on the conversion of opium to morphine/heroin within Afghanistan. "Value of the opiate economy" refers to the sum of the value of the domestic market and the value of opiates believed to be exported. The net value refers to gross value minus costs for imported precursor substances needed for heroin manufacture. *In the farm-gate value estimation and in the value of a kilogramme of exported opium, imported goods are not considered; therefore no net estimate is available. Details on the calculation and the underlying assumptions are provided in the methodology section.*

[11] GDP estimate of 18.54 billion US$ for 2015/2016; Source: Central Statistics Organization (CSO) of the Government of the Islamic Republic of Afghanistan.
[12] World Bank, World Development Indicators.
[13] Central Statistics Organization (CSO) of the Government of the Islamic Republic of Afghanistan.
[14] It should be stressed that despite ongoing improvements in the estimates of the opiate economy through additional information-gathering activities, economic calculations remain far less robust than estimates of the area under cultivation, opium yield and opium production. The calculations presented here are intended to provide reasonable orders of magnitude of the income generated rather than exact amounts.

In the past, the relative size of the illicit opiate economy was even larger. From 2003 to 2007, the gross value of the opiate economy was equivalent to almost half of Afghanistan's total licit GDP. The decrease in the value of the opiate economy relative to GDP has been mainly due to GDP growth and not to significant reductions in the production or cultivation of opium. While this may indicate that Afghanistan's economy has become less and less dependent on income from opium, at the farmer level, in many rural communities, dependency on the opiate economy remained high. In Hilmand province, for example, opium poppy cultivation accounted for almost 20 per cent of the total area of agricultural land use in 2016.

**Figure 1: GDP, value added of the agricultural sector and estimated gross value of opiate exports, Afghanistan,** (US$ billion) **2000-2016**




*Source: MCN/UNODC Afghanistan opium surveys (value of opiate exports); World Bank (GDP and value added of the agricultural sector, 2002-2015); CSO Afghanistan (GDP and value added of the agricultural sector, 2015/16). Note: The gross value of opiate exports is shown because of data availability prior to 2011, however, the net value of the opiate economy is considered to be more appropriate for comparison with GDP.*

It is certain that opium poppy-related income helps Afghanistan to cope with its economic and social challenges. The income from opium serves as a coping mechanism for poverty by providing the poor with access to land and credit, albeit on unfavourable terms, and is a source of wealth creation for those who are "better-off".[15] Farmers and wage labourers spend the bulk of their earnings from opium mostly on domestic goods and services, thus creating licit value added within their communities and the country.

A considerable share of the rural population is affected by opium poppy cultivation. In 2016, opium poppy was cultivated in about one in three villages. In some areas, the concentration was much higher. While half of the villages in Eastern region reported opium poppy cultivation, in Hilmand province, the share was almost 90 per cent.

The farm-gate value of opium is an important measure of the income generated by the cultivation and harvesting of opium. In 2016, Afghan farmers earned a combined US$ 898 million at the farm-gate, which is a 57 per cent increase from 2015. The farm-gate value corresponded to 5 per cent of GDP, or more than a fifth of the entire agricultural sector of the country.

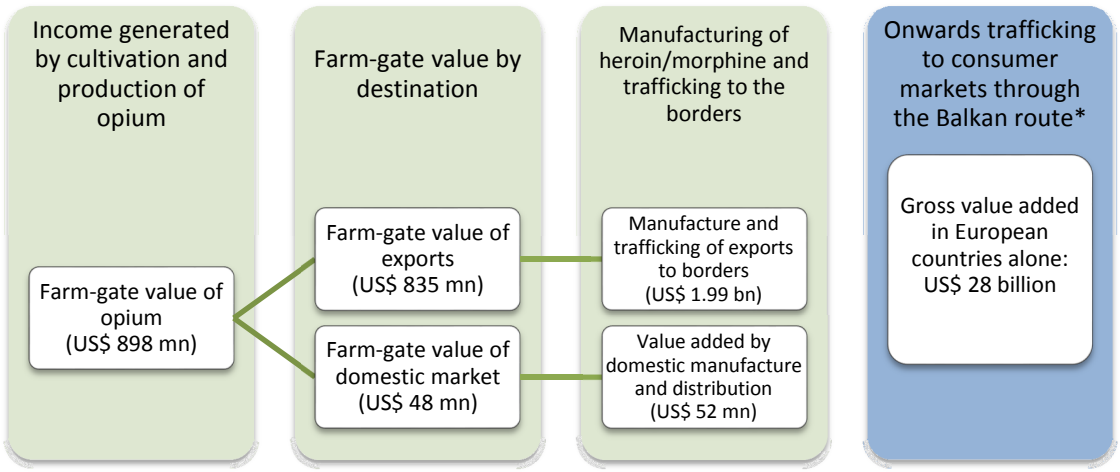
Opium poppy cultivation provides access to daily wage labour for a large number of farmers and temporal workers, and is also a source of income for a range of other people involved in the trade. The work force needed for harvesting opium alone is of considerable size. In 2016, opium poppy cultivation provided daily wage labour for an estimated 47 million person days or an equivalent of 235,100[16] full time jobs. Opium poppy lancers (workers harvesting opium) earn considerable amounts of money when compared to earnings from other – licit – activities. Daily wages for lancing (US$ 8.4 in 2016) were more than twice as much as for other, non-opium-poppy, farm

[15] World Bank (2005), *Afghanistan - state building, sustaining growth, and reducing poverty*. World Bank country study.
[16] Full time job assumed to have 200 working days a year.

labour (US$ 4.0 in 2016). The combined wages for opium poppy labour amounted to US$ 396 million,[17] or 44 per cent of the farm-gate value of opium.

Afghan farmers use their income from opium poppy for purchasing food, for medical expenses, and some may invest in education, property and farming tools to increase productivity. The local economy, such as local bakers, butchers or other small businesses, profit indirectly from the income generated by opium poppy cultivation.

**Figure 2: Net value of the Afghan illicit opiate economy** (US$ 2.9 billion) **2016, by component, and estimated proceeds from onwards trafficking** (average 2010-2015)




**Proceeds from onwards trafficking are an average of five years between 2010 and 2014; Sources: UNODC, "Drug money: the illicit proceeds of opiates trafficked on the Balkan route". Data on the value of the opiate economy 2016 are MCN/UNODC estimates. Note: The net value is the gross value minus estimated expenditure for imported precursor substances for heroin/morphine production. The value of onwards trafficking to consumer markets in Europe is a gross value. Seized opiates are not considered in these calculations.*

*Note: Opium poppy field in Afghanistan. Source: MCN/UNODC*

The value of the opium production at farm-gate - and thus the overall income of the Afghan rural population - is small when compared to the proceeds generated within the country from the illicit manufacture of opiates and onwards trafficking to the borders. It is insignificant when compared to the proceeds made by traffickers and organized crime groups who distribute opiates to the consumer markets in Europe and elsewhere.

[17] Combined estimates were calculated before rounding separate estimates.

The proceeds of traffickers obtained through the processing of opium into morphine/heroin and through the export of processed and unprocessed opiates is the net value of all exported opiates after the opium left the farm (US$ 1.99 billion). A 2015 UNODC study[18] on Afghan opiates trafficked to Western Europe through the Balkans estimated the total value of illicitly trafficked heroin and opium at some US$ 28 billion per year, which was 51 per cent bigger than the entire GDP of Afghanistan in 2016. Moreover, this estimate pertains only to opiates trafficked along the Balkan route.

These proceeds hardly feed into Afghanistan's licit economy. Afghan opium traffickers and processors seem more likely to save a substantial proportion of their revenue and spend money on imports – thus using their proceeds in a way which does not create benefits for the licit Afghan economy.[19] Trafficking from Afghanistan's borders to end-consumer markets appears to be organized by nationals of countries other than Afghanistan with the result that proceeds are – in some sense – lost to Afghanistan's economy.

In summary, while the illicit opium economy does provide a significant net inflow of money into Afghanistan's balance of payments, this is reduced by drug-related outflows of funds, which include capital flight and spending on imports, including abroad (for example property purchases in other countries).[20]

The size and prominence of the opium economy in rural communities make a replacement of opium poppy cultivation as an economic factor challenging. An illicit economy of this size deprives the country of urgently needed resources for private and public investment and thereby hampers infrastructure spending and economic growth. A considerable portion of the opiate economy (in 2016, an estimated 5.4 per cent or US$ 160 million[21] [22] of 'poppy taxes' alone) funds insurgency groups, which in turn weakens the rule of law and security. Tackling the illicit economy while fostering economic development is key to achieving sustainable development in Afghanistan.

### 3.1.2 Economic development in rural households: The role of opium poppy income in sustaining the livelihoods of farmers


Afghanistan's rural population is – on average – poor. According to the MCN/UNODC village survey results, the average per person cash income was below the international threshold for extreme poverty[23] in 42 per cent of villages in 2016. Among villages affected by opium poppy cultivation, the average income in one third of all villages was below the poverty line (very low income villages); in villages not affected by opium poppy cultivation it was 45 per cent.

[18] UNODC (2015), *Drug Money: the illicit proceeds of opiates trafficked on the Balkan route.*
[19] Doris Buddenberg and William A. Byrd, eds., Afghanistan's Drug Industry: Structure, Functioning, Dynamics and Implications for Counter-Narcotics Policy (UNODC and World Bank, 2006).
[20] Ibid.
[21] Village headmen reported if farmers paid money on their opium sales to non-state authorities. Overall, an estimated 56% of the opium harvest was taxed by non-state authorities. The reported taxes averaged at 10.2% of the sales value. These estimates do not include revenues made directly from insurgency involved in the manufacturing or distribution of opium sales
[22] The UN Security Council Sanctions Committee estimated the overall annual income of the Taliban (drugs and other sources of income) at around $400 million; half of which likely to be derived from the illicit narcotics economy. Source: Security Council, Seventh report of the Analytical Support and Sanctions Monitoring Team submitted pursuant to resolution 2255 (2015) concerning the Taliban and other associated individual and entities constituting a threat to the peace, stability and security of Afghanistan, 5 October 2016. S/2016/842, para15.
[23] Currently measured as people living on less than $1.25 a day at 2011 United States dollars purchasing power parity (ppp).

**Table 2: Average self-reported annual household income by region and type of village (US$), 2016**

| | Average farmers' household income (US$) in villages | | Average per-person income (US$) in villages | |
|---|---|---|---|---|
| | Without opium poppy cultivation | With opium poppy cultivation | Without opium poppy cultivation | With opium poppy cultivation |
| **Eastern** | 2,700 | 2,600 | 200 | 200 |
| **Northern** | 2,200 | 2,700 | 250 | 270 |
| **Southern** | 2,700 | 4,500 | 200 | 360 |
| **Western** | 1,700 | 1,800 | 210 | 240 |
| **National** | 2,400 | 3,400 | 230 | 300 |

** Note: Average farmers' household income is the average income of all farmers (up to three) interviewed in a village. Average household size is based on reports of village headmen. Because of a small number of samples, the Central and North-eastern regions have been excluded from the regional analysis, but are considered in the national average.*

Using household income to measure poverty has limitations. In poor rural economies with a substantial variability of income associated with seasonality and high degrees of self-consumption, household consumption has been found to be a better indicator of current standards of living, using for example the "Cost of Basic Needs" (CBN) approach.[24] Deducing implications on differences in standards of living or livelihood opportunities of households from the survey data is thus difficult, as these also depend on other household assets, such as livestock and size of landholdings.


In terms of food security, there is no significant difference between villages with and without opium poppy cultivation. In the 2016 MCN/UNODC village survey, headmen were asked to estimate the number of households in the village who experienced food insecurity. Overall, 21 per cent of households reportedly experienced some form of food insecurity in 2015/2016; the same shares were reported by both types of villages.

Village headmen in 17 per cent of villages reported that all households had enough food available the past year, meaning that no household in the village experienced food insecurity (there were no significant difference between opium poppy and non-opium poppy cultivating villages). One difference is that village headmen of non-opium-poppy villages reported more drastic strategies for coping with food insecurity (such as selling household assets) more frequently. A possible explanation is that the on average higher cash income in opium poppy villages allowed for a more flexible response when facing food insecurity.

The size of land available to a farmer proved to be relevant in explaining important livelihood indicators such as food stocks or income. Smallholders have precarious livelihoods, as they are vulnerable to both market and agricultural shocks, and too often have to resort to selling their productive assets – including land – in order to cope with shocks. [25] Moreover, lack of access to land has been found to be a driver of illicit cultivation, and land tenure a crucial element for the long-term success of alternative development.[26]

When looking at the self-reported access to all forms of land (owned, rented, and land accessed in sharecropping modality), farmers who cultivate opium poppy frequently[27] have, on average, less land available than all other types of farmers. There were strong regional differences, indicating

[24] In 2014, the *Afghanistan Living Conditions Survey 2013-2014* used this approach and estimated the share of the population living below the national poverty line at 39.1 per cent (an increase from 36.5 per cent in 2011-2012). For a detailed discussion of measuring poverty in Afghanistan see: Central Statistical organisation (CSO) and the World Bank, *"Setting the official poverty line for Afghanistan"*; and Central Statistical organisation (CSO), *Afghanistan living conditions survey 2014-15.*

[25] Food security and agricultural cluster, Afghanistan (2015). *"Seasonal Food Security Assessment, 2015"*. The study found that the size of the landholding seemed to be more relevant than the type of property right (whether shareholding, tenancy or land ownership).

[26] See e.g. *World Drug Report*, 2015, p. 105

[27] Poppy farmers in 2016 who had cultivated opium poppy in at least four of the five years between 2011 and 2015.

that access to land is related more to local circumstances than to the presence of opium poppy cultivation.

**Table 3: Average size of landholding by region and type of farmer** (jerib)**, 2016**

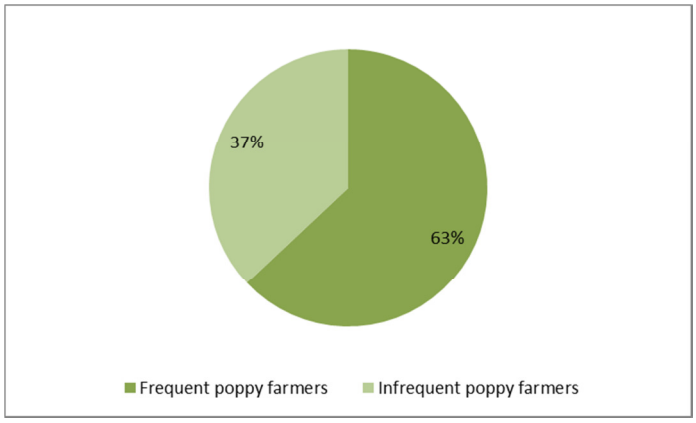
| | Eastern region | Northern region | Southern region | Western region | National average |
|---|---|---|---|---|---|
| **Frequent poppy farmer** | 3.1 | 29.6 | 16.3 | 15.3 | 13.5 |
| **Infrequent poppy farmer** | 4.2 | 28.6 | 35.9 | 10.6 | 24.6 |
| **Stopped cultivating** | 3.9 | 42.0 | 27.2 | 13.6 | 21.2 |
| **Never cultivated** | 3.7 | 32.5 | 18.4 | 13.3 | 18.1 |

*Note: Central and North-eastern regions have been excluded from the regional analysis, but are considered in the national average. Five jerib are roughly one hectare. Frequent poppy farmers cultivated opium poppy in 2016 and at least four out of the five years between 2011 and 2015; infrequent poppy farmers cultivated in 2016 and in less than four of the years between 2011 and 2015.*

Cultivating opium poppy, a lucrative cash crop, is one of the many coping strategies that a rural household may employ for securing its livelihood, with livelihood understood as all activities and decisions that enable members of a household to live. Livelihood strategies adopted by a household – poppy growing or others – are not constant and change over time. New strategies are continuously developed and adopted in response to changes in circumstance either within or outside of the household, such as changing monetary needs or adverse weather conditions in the crop growing season. Thus, the decision to cultivate opium poppy can change from one year to the next.

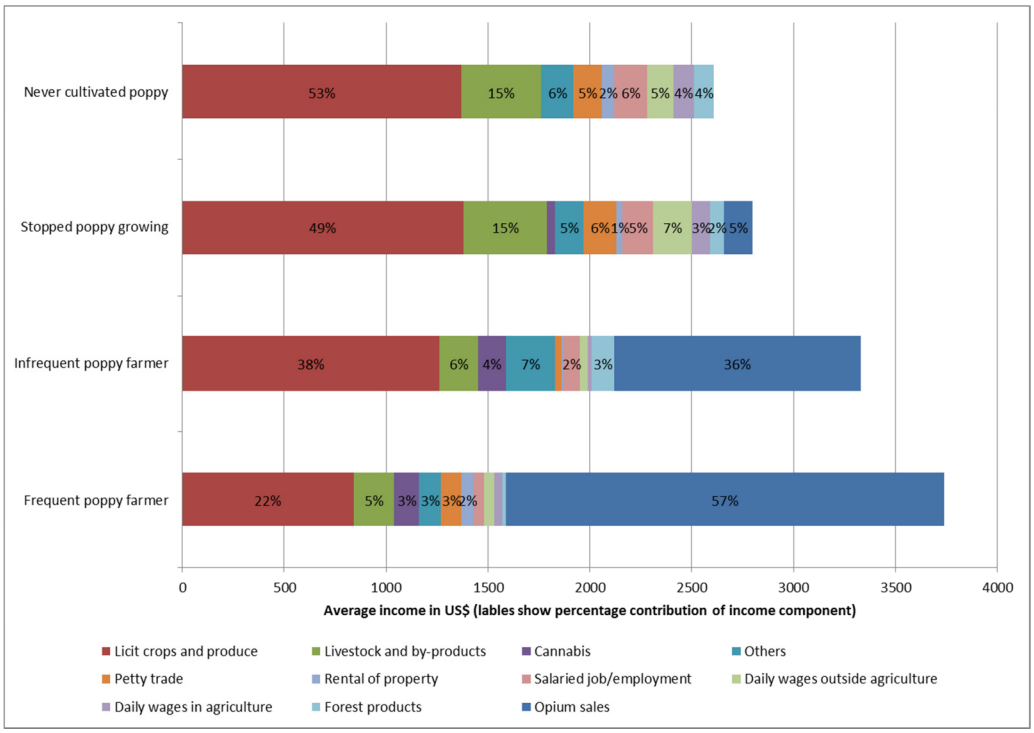
In 2016, 63 per cent of all poppy farmers had cultivated opium poppy in at least four of the five years between 2011 and 2015, and could be classified as frequent poppy farmers. The remaining 37 per cent of farmers had cultivated in less than four years in this time period, and were thus infrequent poppy farmers or poppy farmers engaged in opium poppy cultivation in the past three years.

**Figure 3: Share of frequent and infrequent poppy farmers, 2016**




One indicator of the impact of opium poppy in a household is the share of household income it provides. For farmers who cultivated opium poppy frequently, sales of opium poppy and derivatives constituted the main source of income in the year before the survey. On average, such sales accounted for 57 per cent of the annual household income of frequent poppy farmers. For infrequent farmers, opium poppy made up 36 per cent of household income, almost as much as earnings from licit crops (38 per cent).

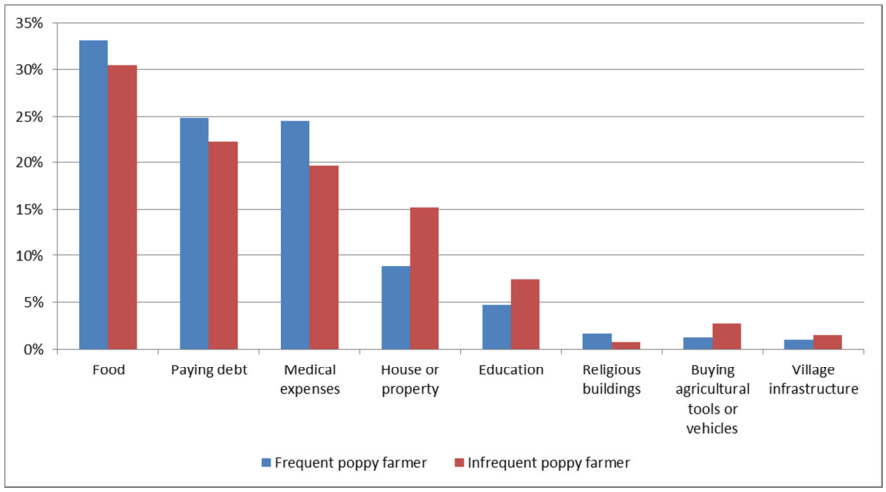
**Figure 4: Shares of total annual income per income-generating activity by type of farmer in Afghanistan, 2015** (reported in 2016)




*Note: Income by component is shown in absolute terms; data labels represent the percentage contribution of each component to the total.*

Opium poppy farmers use their income for covering basic needs. Food, paying debt, and medical expenses were the three most common uses of opium income reported by farmers. Investment in property, education, or other activities that have potential in building alternatives to opium poppy cultivation, was reported only by few farmers and more often by farmers who cultivate opium poppy infrequently.

**Figure 5: Use of income from opium poppy reported by poppy farmers, 2016**




*Note: Farmers were asked for the three main uses of their income from opium poppy. Data reflects all mentions of a purpose, regardless of its rank.*

Depending on their needs and opportunities, opium poppy farmers vary their total area under opium poppy cultivation over time, either by using their own land or other modalities (tenancy or sharecropping). In the Northern region, large relative increases in area under opium poppy cultivation were observed, with most farmers (64 per cent of frequent poppy farmers and 63 per cent of infrequent poppy farmers) reporting increases in the land area dedicated to opium poppy.

In the Southern region, where cultivation levels have been stable, more than 90 per cent of farmers reported decreases or no changes. The increase in the total estimated area under opium poppy cultivation in the North can be explained by larger average areas per farmer and by more farmers engaging in this activity.

Since the decision to cultivate opium poppy can change from one year to the next, an absolute divide of farmers into opium-poppy and non-opium-poppy growers is thus an oversimplification. A farmer might cultivate opium poppy in one year and abstain in the next – depending on the fluctuating economic needs and opportunities.

Opium poppy farmers reported higher cash incomes than other farmers, which may provide more flexibility in the allocation of assets to cope with shocks like food insecurity. However, opium poppy farmers reported to use the income gained from opium mostly for covering basic needs. The potential that opium poppy cultivation has for sustainably improving livelihoods of farmers seems thus to be limited.

Moreover, farmers' dependency on opium poppy cultivation is in many cases not simply related to the income generated by opium poppy sales, but rather to the lack of continuous, reliable and sustainable access to both physical and economic markets for selling alternative products, and to the overall limited opportunities for their villages in terms of social and economic development, governance and security.

*Farmer in Baghlan, Afghanistan. Source: MCN/UNODC*

## 3.2 Environmental sustainability


In some provinces, Afghanistan faces serious problems as a result of desertification and drought, with potentially severe consequences for Afghans who rely on agriculture and animal husbandry for their daily survival.[28] Drought and difficult climatic conditions appear to have intensified over time and might continue to do so in the future. In particular, spring precipitation, which is relevant for agriculture, has significantly decreased - by almost a third - between 1951 and 2010, and the average temperatures in the South have increased by 2.4°C in the same period of time.[29]

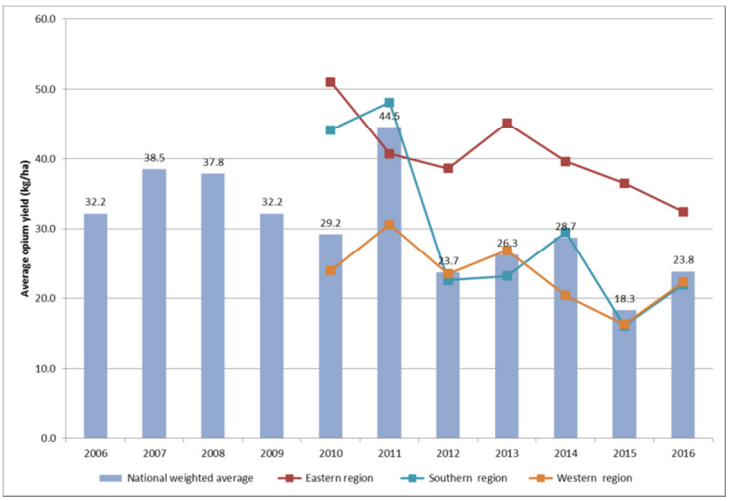
In areas with intensive opium poppy cultivation, careless growing may place an additional strain on natural resources, such as soil quality and the availability of water. A case in point is the province of Hilmand, which continues to be affected by high levels of opium poppy cultivation. Hilmand province saw a rapid expansion of the agricultural area north of the Boghra canal from only 834 ha of arable land in 1999 to 26,600 ha in 2010. These increases were achieved by using already scarce water resources by hoarding water from the irrigation system and by rendering

[28] United Nations Environment Programme, "Natural resource management and peacebuilding in Afghanistan".
[29] UNEP, AFGHANISTAN: CLIMATE CHANGE SCIENCE PERSPECTIVES, 2016

financially viable pumping from the aquifer through tube wells. Covering the initial costs of diesel fuelled pumps[30] and the running costs for diesel during cultivation was made possible by the proceeds from lucrative opium poppy cultivation. This expansion of arable land was largely dedicated to opium poppy cultivation,[31] constituting up to one third of the land potentially available for agriculture.[32] The sizable investments necessary to improve the land required high production levels of opium, and might have led to an overexploitation of soil and water.

Since 2012, opium yields in the Southern region have been below the national average. In 2015, yields at about 16 kilogramme per hectare marked a record low since the beginning of systematic yield surveys in 2006. In comparison, in 2015, yields reached up to 41.5 kilogramme per hectare and 39.6 kilogramme per hectare in the Central and North-eastern regions, which is a level comparable to the nation-wide averages from 2008 or 2011. In 2016, yields increased to 22.0 kilogramme per hectare but were still below the national average at 23.8 kilogramme per hectare. A similar, but less drastic reduction of yields was observed in the Eastern and Western regions.

**Figure 6: Average opium yields in selected regions** (kilogramme per hectare)**, 2006-2016**




*Note: In 2010, the South was heavily affected by opium poppy diseases, reducing the average yields in affected areas to 10.1 kilogramme per hectare. The extent to which this occurred could not be estimated, a weighted average is therefore not available. Yields of the years 2006 and 2009 have been revised in 2012. Due to this revision, no regional estimates are available in that period of time.*

Recent decreases in area under opium poppy cultivation in the deserts of Hilmand province are potentially linked to the lower profitability of opium poppy due to lower yields. Making land arable and maintaining fields under unfavourable conditions may not be profitable enough anymore.[33]

Adverse climatic conditions and unsustainable agricultural practices might have affected other provinces in the Southern and Western regions as well. In Nimroz province, for example, the land available for agriculture declined by 19 per cent between 2014 and 2015,[34] which directly affected the area available for opium poppy cultivation. MCN/UNODC analyses have shown that in Nimroz and Farah provinces, more than 40 per cent of the 2014 poppy fields were left fallow in 2015, indicating lower yields or limited profitability. These shares were lower but still relevant in Hilmand (17 per cent) and Kandahar provinces (30 per cent). The MCN/UNODC village survey asked the farmers about current quality of soil and for the reasons behind bad soil quality. No wide-spread problems were reported, however.

[30] There have been reports of recent increases in pumps powered by solar energy in selected districts of Hilmand province. Initial investment costs appeared to be higher for solar powered pumps; however, reported running costs were lower. Source: David Mansfield, Paul Fishstein and OSDR, 2016. "Time to Move on: Developing an Informed Development Response to Opium Poppy Cultivation in Afghanistan"

[31] David Mansfield, "Between a rock and a hard place: counter-narcotics efforts and their effects in Nangarhar and Helmand in the 2010-11 growing season", Case Study Series (Kabul, Afghanistan Research and Evaluation Unit, 2011).

[32] See, e.g., MCN/UNODC Afghanistan opium survey 2014 – Cultivation and production.

[33] See, as well, MCN/UNODC, *Afghanistan opium survey 2015 – socioeconomic analysis*.

[34] MCN/UNODC, *Afghanistan opium survey 2015 – cultivation and production*.

In some areas of the Southern and Western regions, agriculture and specifically opium poppy cultivation may have been practised in an unsustainable way;[35] for example, by failing to ensure appropriate drainage during irrigation (which causes salinization), restauration of fertility and maintaining a productive soil structure. These depletive factors are eventually exacerbated by susceptibility to pests and diseases, which together provide possible explanations for the decreasing or stagnating levels of opium poppy cultivation in the Southern and Western regions. There is evidence of soil salinization in desert areas,[36] however, no recent estimates of sufficient quality are available to estimate the extent to which this affected the opium poppy cultivating areas and Afghan land in general. MCN/UNODC collects data from the field on soil quality, plant diseases and other problems related to agriculture and quality of land. However, the survey's findings do not allow for a quantification of the area affected.

In sum, unsustainable opium poppy cultivation may have exacerbated environmental issues such as water scarcity in heavily affected areas. Water scarcity and climate change may, on the other hand, drive many farmers to choose the lucrative cash crop of opium poppy as a livelihood strategy.

Moreover, there is a risk of shifting cultivation within Afghanistan. If conditions in the main opium poppy cultivating provinces continue to deteriorate, cultivation might continue to move to and increase in other provinces, where agricultural conditions are more favourable. The increases in the Central and Northern regions, which coincided with a deterioration of the security situation, may already be a consequence of this development, which calls for close monitoring and appropriate action.


*Solar panel used for powering pump irrigation, Afghanistan. Source: MCN/UNODC*

[35] E.g. David Mansfield and Paul Fishstein (2016) *"Moving with the times: How opium poppy cultivation has adapted to the changing environment in Afghanistan"*
[36] Alcis, *Draining the deserts of Afghanistan,* July 2016.

*Diesel pumps used for irrigation, Afghanistan. Source: MCN/UNODC.*

## 3.3 Social development

### 3.3.1 Opium poppy cultivation mainly takes place in areas with limited access to basic infrastructure and services such as health care centres, schools and electricity

When comparing opium poppy cultivating villages with other villages, it becomes apparent that opium poppy cultivation is strongly linked to more limited access to infrastructure and services which are essential to the operation of a society. The UN Guiding Principles on Alternative Development define alternative development as a process to prevent and eliminate illicit crop cultivation through locally designed rural development measures, within a framework of a comprehensive and permanent solution to the drug problem.

The MCN/UNODC village survey asked the village headmen about access to:

- a health care centre or medical clinic
- a health care centre or medical clinic with female staff available
- availability of schools for boys and for girls
- access to electricity from the grid (public electricity)
- access to roads and public transportation
- the existence of farmers' associations and small scale industries
- availability of a local market to sell produce


When comparing villages with and without opium poppy cultivation, it becomes apparent that opium poppy villages have significantly less access to health care. Only 45 per cent of opium poppy cultivating villages reported having access to health care centres and only 22 per cent to health care centres with female staff. Among villages without opium poppy cultivation, the shares were 64 per cent and 53 per cent, respectively. A regional analysis revealed that villages in the Western and Eastern regions, in particular, have below-average access to clinics (see data section on "Health care").


There is a striking relationship between the absence of girls' and boys' schools and the presence of opium poppy cultivation. In 66 per cent of poppy-free villages, headmen reported that there was a girl school; however, the same was reported for only 30 per cent of all villages where opium poppy cultivation was present. For boys' schools, the difference was smaller, but still considerable. While 90 per cent of all villages without opium poppy cultivation had access to a boys' school, only 63 per cent of all villages affected by cultivation had such schools.

Access to both boys' and girls' schools differed at the regional level (see map 3). A noticeable lack of schools was found in the South, but also in the mostly poppy-free Central region. In Badakhshan in the North-eastern region, on the other hand, where significant levels of opium poppy cultivation could be found, there was relatively high availability of schools for both genders. The presence of schools was also strongly related to the presence of government control and security.


Electricity is in general not widely available in Afghanistan, but even more scarce in areas affected by opium poppy cultivation. Out of all opium poppy cultivating villages, 3 per cent reported to have access to public electricity, compared to 12 per cent of all non-opium-poppy villages. Access to reliable electricity from the grid is important to human development as electricity is, in practice, indispensable for certain basic activities, such as lighting, refrigeration and the running of household appliances. Moreover, electricity cannot easily be replaced by other forms of energy.[37]


Easy access to markets – a place where to sell and buy agricultural and other products – is imperative for obtaining sufficient household income. A lack of close-by markets restrict farmers' opportunities for income generation, as large distances increase uncertainty and transportation costs, and this means limited sales opportunities, reduced farm-gate profits and increased farm costs.[38] In the past, a clear relation between the presence of opium poppy cultivation and the absence of accessible, close-by markets has been observed. With the increasingly wide-spread nature of opium poppy cultivation, this difference seems to have become less important. In 2016, 20 per cent of all villages reported having a local market, with similar shares among opium poppy cultivating and non-opium-poppy villages.[39] At the national level, there were no statistically significant differences in travel time to the market between poppy and non-opium-poppy villages.


The availability of roads and sufficient transport services are fundamental for economic development in rural areas, as physical isolation is one of the core features of the poverty trap. In the past decade, the international community has spent billions on constructing and repairing Afghanistan's road infrastructure, including the completion of the ring road, several highways and countless smaller, yet important rural projects.[40] Overall, 93 per cent of all headmen reported that villagers had access to roads. Among villages affected by opium poppy cultivation, the share was slightly smaller, at 90 per cent. In villages without opium poppy cultivation, 94 per cent of headmen reported that villagers had access to roads.

Farmers' organizations facilitate more direct integration of farmers into value chains and increase their negotiation power. The UN Guiding Principles on Alternative Development encourage efforts that allow the promotion and enhancement of farmer associations in illicit crop cultivating communities. Opium poppy cultivating villages had fewer formal farmers' organizations, such as co-operatives (5 per cent), than non-opium poppy villages (13 per cent) in 2016.

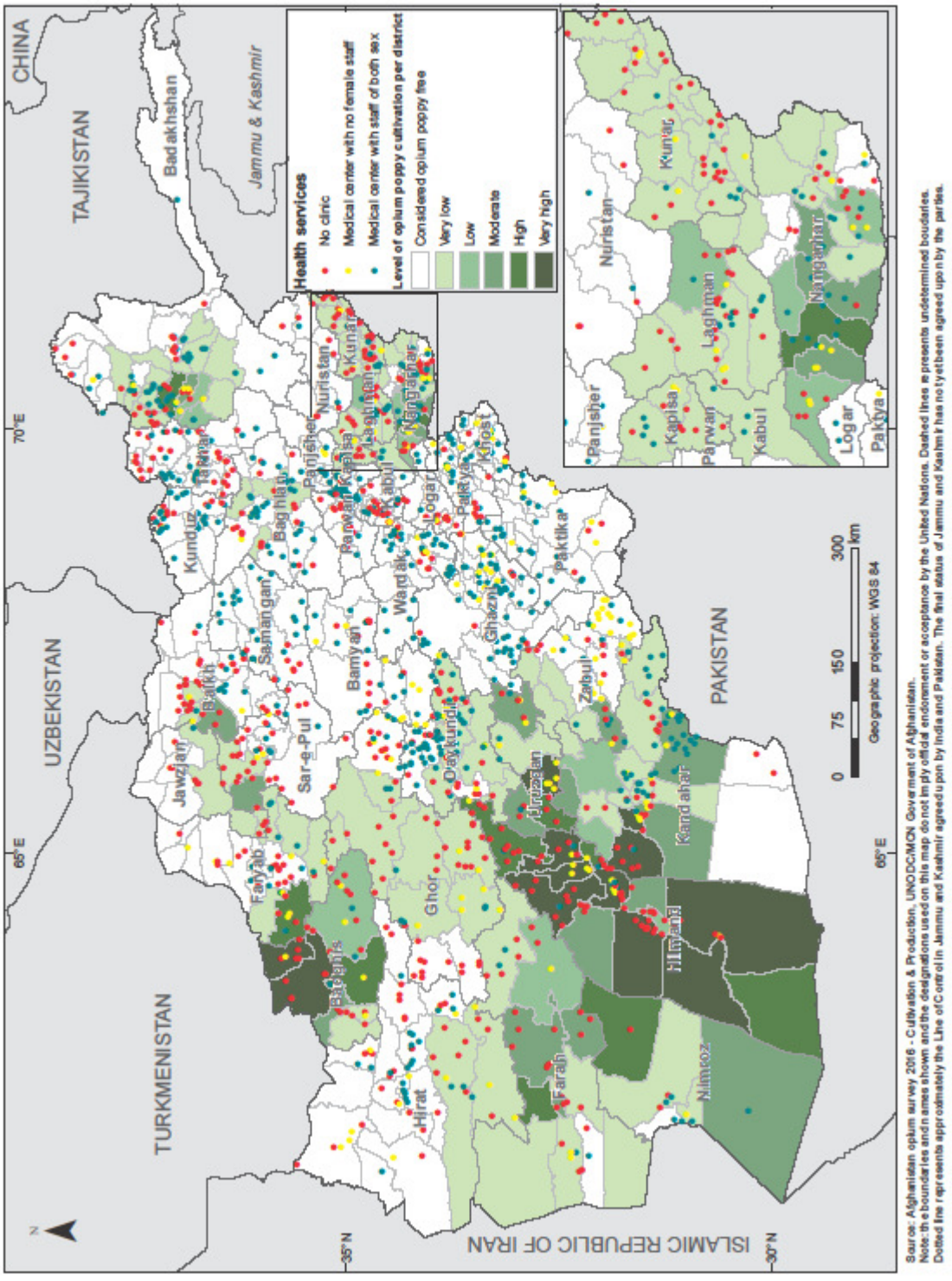
Small scale industries or manufacturing enterprises bring labour opportunities to rural areas and can counteract seasonal unemployment in agriculture. No significant differences in the presence of small scale industries for opium-poppy/non-opium-poppy villages could be found in Afghanistan.

[37] World Bank, *World Development Indicators*.
[38] International Fund for Agricultural Development (IFAD), 2003. *Promoting market access for the rural poor.*
[39] For more details and regional estimates see data section 4.4.4 on "Access to markets"
[40] See, e.g. World Bank, *Improving Road Access Transforms Lives in Afghanistan's Daykundi Province,* feature story, March 6, 2017.

*Farmer in Baghlan, Afghanistan. Source: MCN/UNODC*

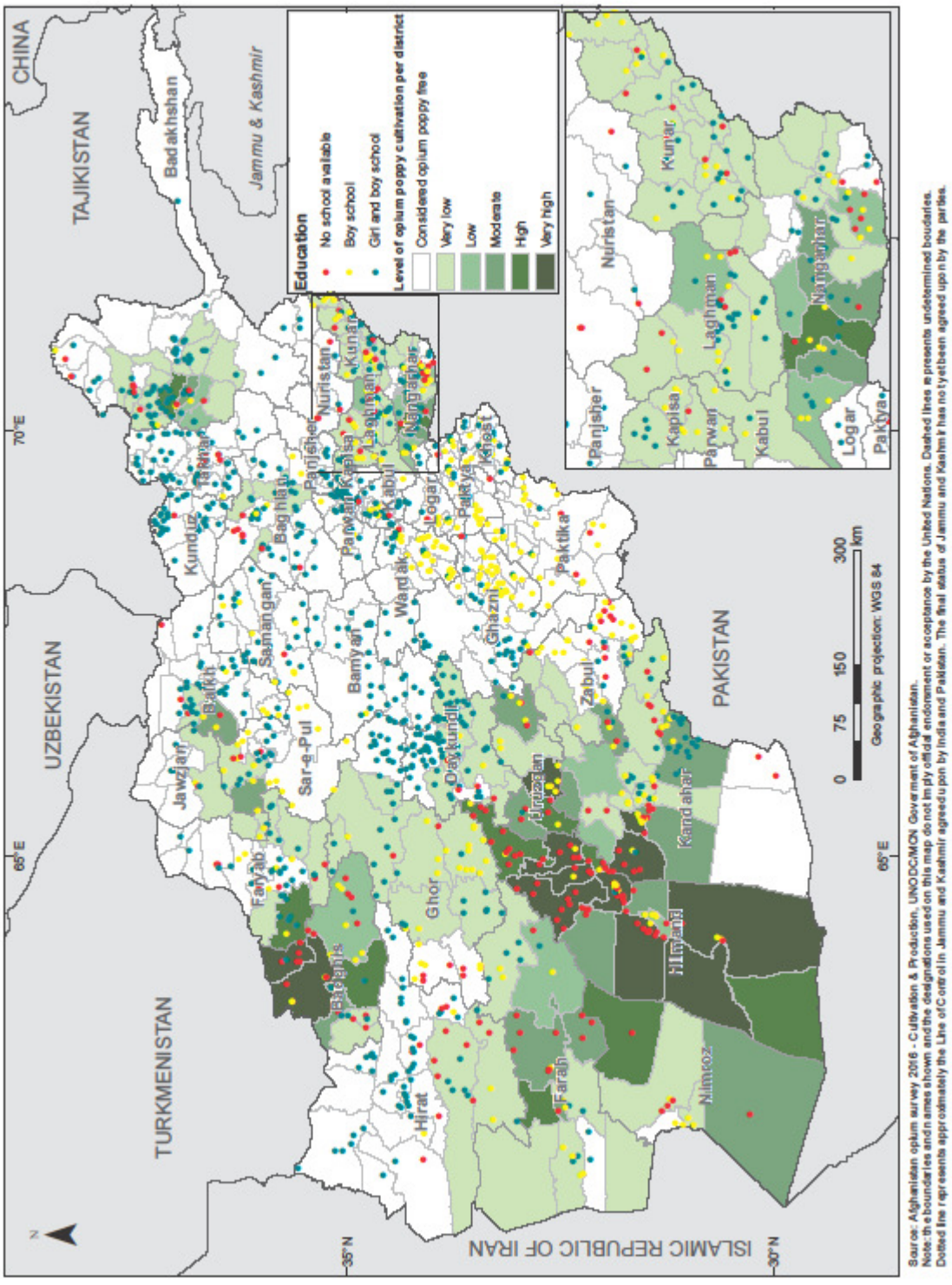
*Bridge in Afghanistan. Source: MCN/UNODC*

**Map 2:** **Health services and opium poppy cultivation, 2016**




Source: Afghanistan opium survey 2016 - Cultivation & Production, UNODC/MCN Government of Afghanistan.
Note: the boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Dashed lines represents undetermined boundaries.
Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

**Map 3: Access to boy's and girl's schools, and opium poppy cultivation, 2016**




Source: Afghanistan opium survey 2016 - Cultivation & Production, UNODC/MCN Government of Afghanistan.
Note: the boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Dashed lines represents undetermined boundaries.
Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

### 3.3.2 The link between opium poppy cultivation and illicit drug use

There is a well-established link between opium poppy cultivation and illicit drug use in Afghanistan. The latest findings on drug use rates in Afghanistan reveal considerable levels of use among males, females and children. Almost 31 per cent of all households in Afghanistan were affected by drug use in 2015.[41] Rural households are far more affected than urban ones; 39 per cent of rural households compared to 11 per cent of the urban. Approximately 9 per cent of Afghan children tested positive for one or more drugs, and the same geographical pattern was visible. While 11 per cent of children in rural areas tested positive, 2 per cent of the urban children did so.

Opioids were found to be the most prevalent class of drugs used in Afghanistan. Opioid use was also significantly higher in rural villages than in the urban centres. Opioids were used in nearly one out of five Afghan households overall (19 per cent); in 25 per cent of rural households and 6 per cent of urban households. The percentage of rural children who tested positive for opioids was also far higher than that of urban children: 7.5 per cent compared to 1.3 per cent, respectively.

The very high rates[42] of opiate use among rural populations were reflected in the results of the MCN/UNODC women's survey, as well. A total of 167 women in 46 villages were interviewed about their attitudes towards opium poppy, participation in opium poppy cultivation, use of opium in the households and other drug use.

The key findings include:

- 51 out of 167 women reported giving opium to their children to calm them down or help them sleep (70 answered "No" to the question; 46 gave no answer).
- 56 out of 167 women reported using opium to relieve pain or treating sickness (105 reported "No", 6 "No answer"), with the most commonly mentioned diseases/pains being general health and pain (mentioned 16 times), cough and pneumonia (13), and children's health (8).
- 49 out of 167 women reported that opium is used to cope with tiredness (88 reported "No", 49 "No answer").
- 87 out of 167 women named addiction (general addiction or specifically addiction among youth) as a main disadvantage of opium poppy cultivation.

In the farmer survey, farmers were asked about the main reasons for not engaging in opium poppy cultivation. The "fear of addiction of family members" was named by ten per cent of farmers who stopped cultivating opium poppy in 2016 or before as one of the three main reasons for stopping cultivation. Among the farmers who never cultivated opium poppy, 14 per cent mentioned this reason.

The wide-spread use of opiates in Afghanistan is worrying. Lack of access to medical services and medication to treat sickness may lead to increased use of opiates and thus increased rates of opiate use and dependency, since the use of opium for treating common sicknesses and pain seems to be a common practice. Drug use often affects people during their most productive years, and the entrapment of youth in both drug use and the illicit drug trade itself, as opposed to engagement in legitimate employment and educational opportunities, poses distinct barriers to the development of individuals and the society as a whole.[43]

Moreover, the current annual drug treatment capacity in Afghanistan still only covers 10.7 per cent[44] of opium and heroin users, in spite of continued efforts by the Government and donors to increase treatment provision. Drug prevention interventions are mostly limited to urban areas, with fewer services available in rural areas where drug use is more prevalent.

[41] The Afghanistan National Drug Use Survey collected hair, urine, and saliva from 10,549 Afghans who consented to participate in the survey. These individuals were sampled from 2,757 randomly selected households in 11 urban centers and 52 rural villages. Household rates are based on a positive test from one or more individuals living in the same household.
The Colombo Plan (2015), *"Afghanistan National Drug Use Survey 2015"*; http://www.colombo-plan.org/?wpfb_dl=305.
[42] For international and global rates drug and opiate use see e.g. UNODC (2016), *World Drug Report*.
[43] UNODC (2016), *World Drug Report.*
[44] MCN (2016), *Afghanistan Drug Report 2015*.

### 3.3.3 Gender equality and opium poppy cultivation


Over the last decade, the Afghan government has taken significant steps to improve the position of women in the society and their overall living conditions. Even though much progress has been made, women are still disadvantaged in public and private life, and are often deprived of opportunities for education and economic self-reliance, and have less access to health services than men.[45] This is even more pronounced in areas affected by opium poppy cultivation. MCN/UNODC village surveys have shown that opium poppy cultivation predominantly takes place in areas where the access of girls and women to education and health services is more limited than at the national level.[46]

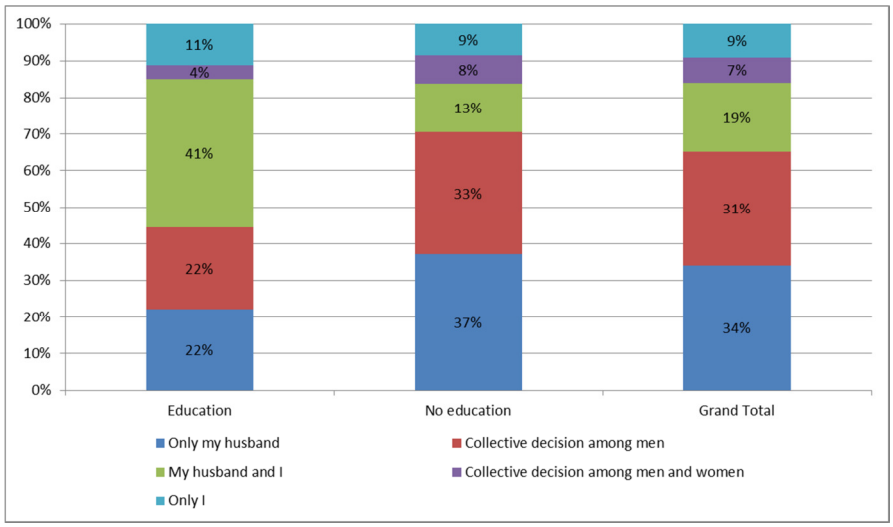
Improving livelihoods through alternative development interventions can therefore promote gender equality in areas affected by opium poppy cultivation. Women's empowerment can also have a measurable impact on the decision of a household to engage in or abstain from opium poppy cultivation.

For the design and implementation of alternative development interventions, it is key to understand the role women play in household decision making and how empowering women and improving gender equality can influence the decision of a household to exclude opium poppy cultivation from their livelihood strategies. To better understand this relationship, MCN/UNODC conducted 167 interviews with women in opium poppy cultivating and non-cultivating households in all regions but the Central region of Afghanistan.[47]

Women's empowerment requires "agency", that is the capacity to make decisions about one's own life and act on them to achieve a desired outcome. There are two main recognized drivers of women's empowerment: endowments (health, education and assets) and economic opportunities.[48]

The MCN/UNODC survey showed that education increased the influence of women on the decision making of a household regarding whether or not to engage in opium poppy cultivation. About six in ten women with some level of education reported that they were able to directly participate in taking the final decision on opium poppy cultivation, while only three in ten women without education said the same. Similar shares were found when restricting the comparison to households that were engaged in opium poppy cultivation.

**Figure 7: Who takes the final decision regarding opium poppy cultivation in the household, as reported by interviewees, by educational status**



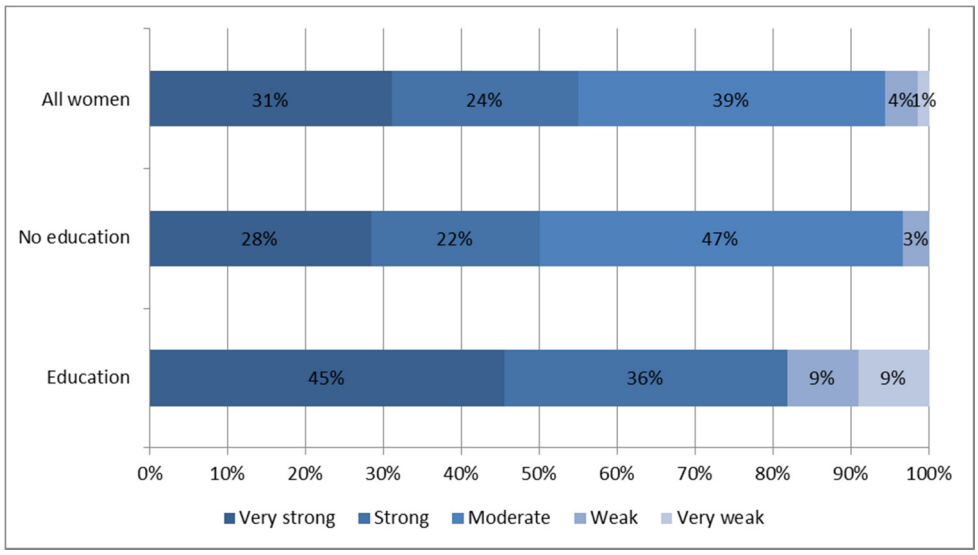

*Note: Women are considered in the educated group if they reported to have at least one year of education.*

[45] For more details on the living conditions of women in Afghanistan see *Afghanistan Living Conditions Survey 2014-15.*
[46] See e.g. section on Social Development.
[47] For more results from this particular survey see section 4.3.
[48] World Bank (2014).*Voice and Agency. Empowering women and girls for shared prosperity.*

Even if they did not participate in the final decision on opium poppy cultivation, women with at least one year of education were more influential in that decision. While 18 per cent of women with some level of education felt that they strongly or very strongly influenced that decision, only about 3 per cent of non-educated women reported the same. Similar findings could be found when restricting the comparison to opium poppy cultivating households.

Overall, women in opium poppy cultivating households reported having a stronger influence on the decision to cultivate opium poppy than women in non-opium-poppy households.[49]

**Figure 8: Woman's perceived influence on opium poppy cultivation decisions within the household, by educational status**




A similar pattern was found in the decision making process around how the income from opium poppy was spent. Forty-six per cent of women with at least one year of education reported partaking in that decision, while 39 per cent of women without education said the same. More importantly, among those women who did not directly participate in the decision, about half of the women with some level of education reported having a strong or very strong influence, but only about 18 per cent women without education felt the same.

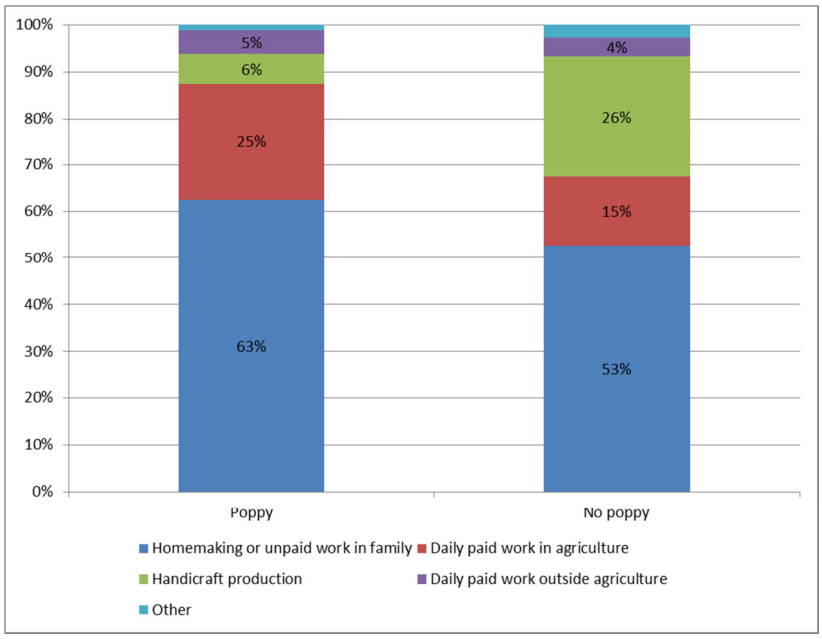
*Woman weaving in Afghanistan. Source: MCN/UNODC*

[49] For more details see section 4.3.

The availability of profitable economic activities for both male and female household members – or the lack thereof – can influence decisions around the cultivation of opium poppy. This was reflected in the results of this survey, as well. About half of the women in non-opium poppy households were able to perform remunerated jobs (47 per cent); in contrast, just over a third of women in opium poppy households were able to do the same (37 per cent). Notably, most of the working women in non-opium poppy households were earning income by producing handicraft (e.g. weaving), while most of the working women in opium poppy cultivating households were daily waged agricultural workers.

The available data did not allow for an assessment of the influence the type of work had on the decision to cultivate opium poppy. More data would be needed on the income earned from each activity and on other factors, such as reliability of income (producing handicraft, for example, might be less prone to seasonality and shocks like bad harvests, and thus a more reliable source of income than agricultural work for daily wages).

**Figure 9: Main economic activity of women in opium poppy and non-opium-poppy cultivating households**




In sum, the data collected during the MCN/UNODC women's survey supported the finding that education can increase the influence of women in a household on the decision of whether to engage in opium poppy cultivation. The additional cash income from the labour of women can reduce the economic incentive to cultivate poppy. However, the opportunities to do so may depend strongly on local circumstances, as many women in opium poppy cultivating villages stated in the context of previous MCN/UNODC research that out of cultural reasons men often do not want women to participate in the work force.[50]

[50] See MCN/UNODC, *Afghanistan opium survey report 2015 – Socioeconomic analysis*.

*Family on the road, Afghanistan. Source: MCN/UNODC*

## 3.4 Peace, justice and strong institutions


Afghanistan remains a fragile and conflict-affected country. The long years of war have weakened state institutions and trust in the government, and fuelled the Taliban insurgency. Such an environment limits development opportunities and economic growth, which in turn drives farmers to resort to illicit opium poppy cultivation as strategy to build their livelihood. Moreover, insurgency groups gain income from opium poppy by – among other things – collecting taxes on opium sales, which further weakens governance in the country by strengthening insurgency.

### 3.4.1 Government control, security and funding of insurgency groups

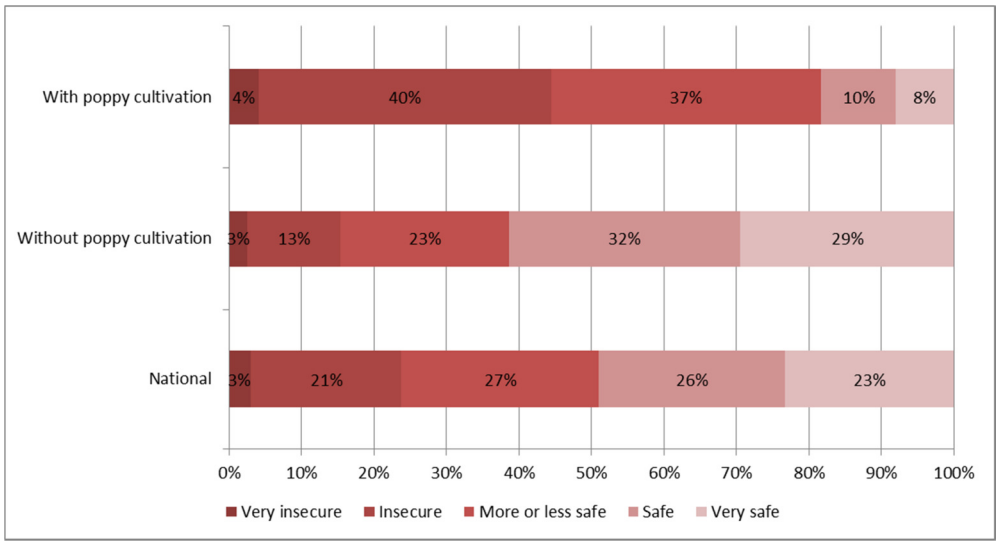
In the MCN/UNODC village survey, village headmen were asked about who was 'in control' of the village. Overall, 37 per cent of all headmen reported that the village was not under the control of the government (30 per cent under the control of insurgency elements and 7 per cent "others").[51] Among villages where opium poppy cultivation took place, the share was much higher: 67 per cent of all headmen reported that the village was outside government control. Among villages without opium poppy cultivation, only 25 per cent of farmers reported that authorities other than the government were in control.

Opium poppy cultivation therefore takes place predominantly in areas without government control. However, there are two main exceptions: in the Central region, there are large areas outside government control and without opium poppy cultivation, whereas in Badakhshan, there are significant levels of opium poppy cultivation in areas under government control.

A similar picture can be seen when looking at security levels. Village headmen were asked to assess whether the village can be considered as very safe, safe, more or less safe, insecure or very insecure. At the national level, about a quarter of village headmen (24 per cent) assessed that their village was insecure or very insecure. Among the opium poppy cultivating villages, almost half of the headmen reported the same (44 per cent), whereas only 15 per cent of villages without opium poppy cultivation were considered insecure or very insecure.

[51] No information was provided to what kind of groupings "others" refer.

**Figure 10: Security assessment of village headmen, by opium poppy cultivation status, 2016**




Moreover, it was found that increased influence of insurgency elements and a deterioration of the security situation in the north of the country coincided with increasing opium poppy cultivation (see map 5). This was in particular salient in the provinces of Badghis, Nangarhar and Sar-i-Pul.

Not only does opium poppy cultivation take place in areas with less governmental presence and with less security, it destabilizes the country further by funding insurgency and anti-government groups. In addition to direct financial gain, engagement in the illicit drug trade may provide other, non-monetary resources to insurgency groups, such as territorial control, military capacity and political and social legitimacy. By protecting illicit activities that provide livelihoods for impoverished segments of the population, armed groups may gain support, protection and intelligence from farmers.[52]

Payments and other form of 'taxes' on opium sales benefit insurgency groups while at the same time limit the already scarce income of many farmers. In 2016, village headmen were asked whether opium poppy farmers pay any taxes on their opium sales, to whom they paid it and what percentage of earnings was collected.

In the Western province, as many as 70 per cent of village headmen from opium poppy cultivating villages reported paying taxes on the income from opium sales, whereas in the Northern province, it was 40 per cent. Overall, an estimated 56 per cent of the opium harvest was taxed by non-state authorities. The reported taxes on opium sales averaged 10.2 per cent.

Applying this estimates to the farm-gate value yields a total sum of US$ 48.7 million that were collected by non-state authorities in 2016. If the same groups collected a similar share of the earnings of onwards manufacturing and trafficking, a total US$ 160 million (~5.4 per cent of US$ 3.02 billion, taxes from the farm-gate value included) would have funded non-state groups in 2016. In comparison, the UN Security Council Sanctions Committee estimated the overall annual income of the Taliban (drugs and other sources of income) at around $400 million; half of which is likely to be derived from the illicit narcotics economy.[53]

Restoring government control and security might help reduce opium poppy cultivation, as it will make it more difficult for farmers and drug traffickers to conduct their business with impunity, and make it easier to create sustainable and licit development opportunities. Examples from the past have shown that opium poppy cultivation can relatively easily shift from one area to another,

[52] Vanda Felbab-Brown (2009), *Shooting Up: Counterinsurgency and the War on Drugs*, (Washington, D.C., Brookings Institution Press).
[53] Security Council, *Seventh report of the Analytical Support and Sanctions Monitoring Team submitted pursuant to resolution 2255 (2015) concerning the Taliban and other associated individual and entities constituting a threat to the peace, stability and security of Afghanistan*, 5 October 2016. S/2016/842, para15.

making villages with weak governance and security structures more prone to be targeted by new or increasing opium poppy cultivation.

Peace, justice and effective, accountable and inclusive institutions are at the core of sustainable development. The SDGs recognize that sustainable development cannot be realized without peace and security and that peace and security will be at risk without sustainable development.

### 3.4.2 Resolution of internal disputes and the role of the organized community (shura)

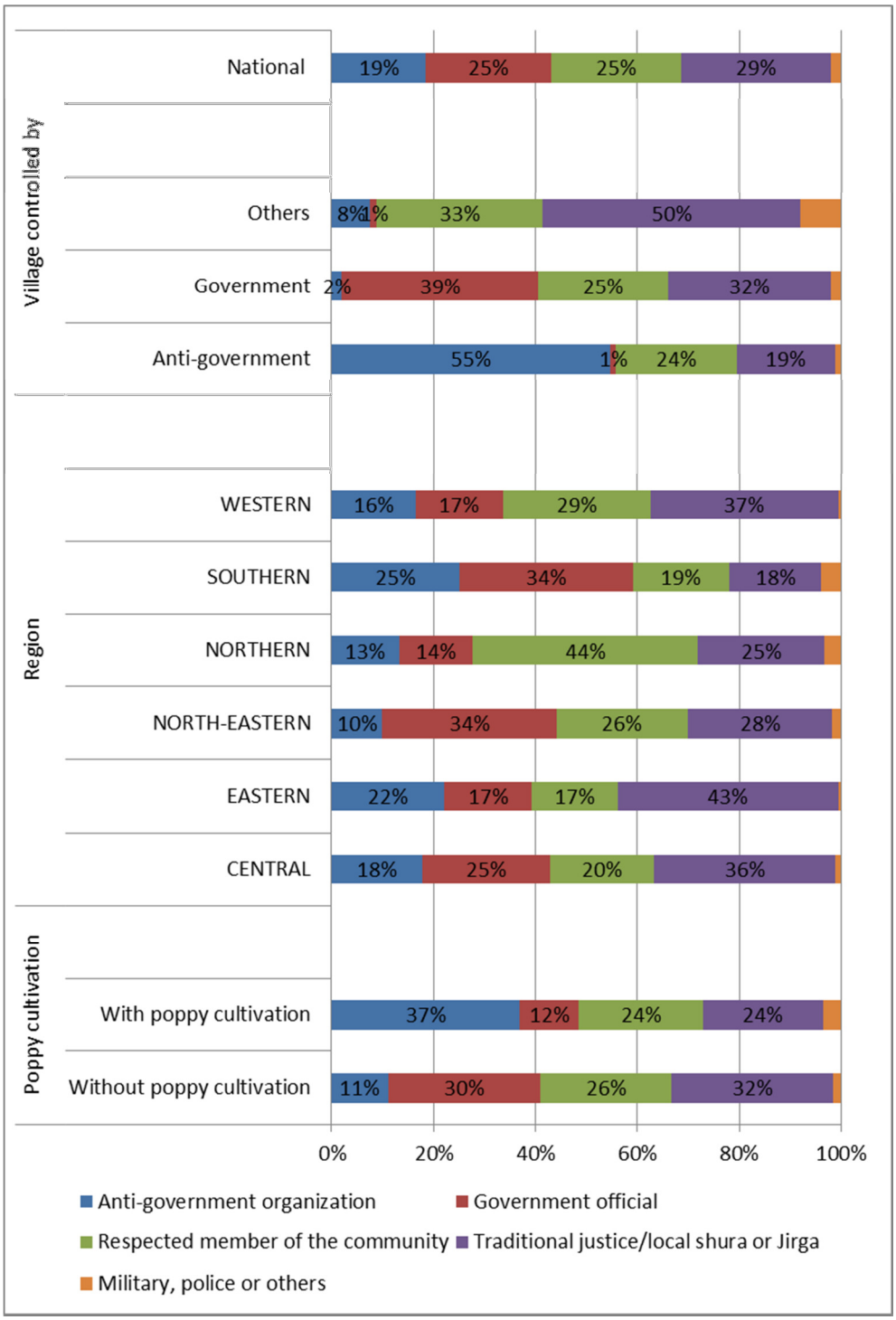
In target 16.3, SDG 16 calls for promotion of the rule of law at national levels and for ensuring equal access to justice for all.

In the MCN/UNODC village survey, village headmen were asked about the main method to solve internal, neighbour-related or domestic disputes from villagers (formal or informal judicial mechanisms). In villages without opium poppy cultivation, 30 per cent of headmen reported that government officials solve disputes, whereas in villages with opium poppy cultivation, only 12 per cent reported this method. Likewise, anti-government organisations were reported to be involved in dispute resolution much more frequently in opium poppy villages than in non-opium-poppy villages.

This was related to government control: villages under insurgency control use anti-governmental organizations much more often for dispute resolution than villages under government control. In villages under "other" control, traditional justice mechanisms and respected members of the community were the most frequently named dispute resolution mechanisms (83 per cent in total).

*Interview with village headmen, Afghanistan. Source: MCN/UNODC*

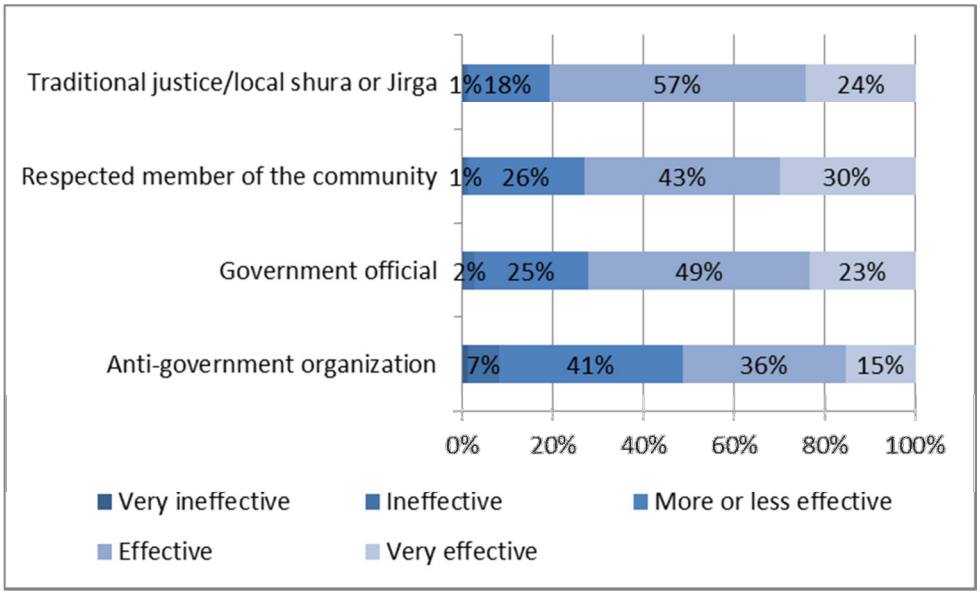
**Figure 11: Main method to resolve disputes, by opium poppy cultivation status, region and governance, 2016**




When asked about efficacy of dispute resolution, anti-government organizations were perceived to be most ineffective: 8 per cent of village headmen found anti-government organizations to be very ineffective and 41 per cent ineffective. In comparison, less than 1 per cent of village headmen considered traditional justice systems to by very inefficient, and 18 per cent considered them inefficient.

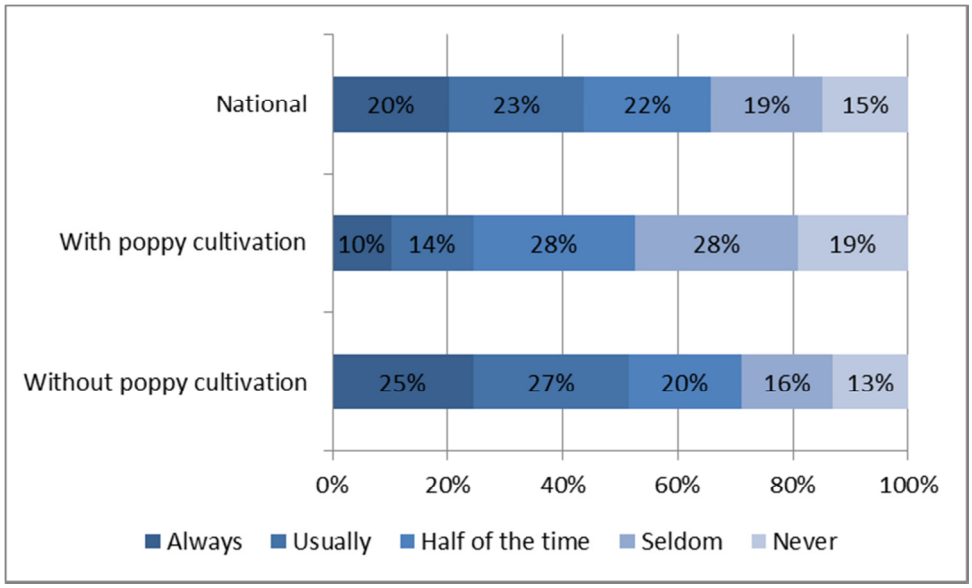
The majority of village headmen who reported a government official as the main dispute resolution method found it to be effective (49 per cent) or very effective (30 per cent).

**Figure 12: Perceived efficacy of dispute resolution method, as assessed by headmen, by method, 2016**



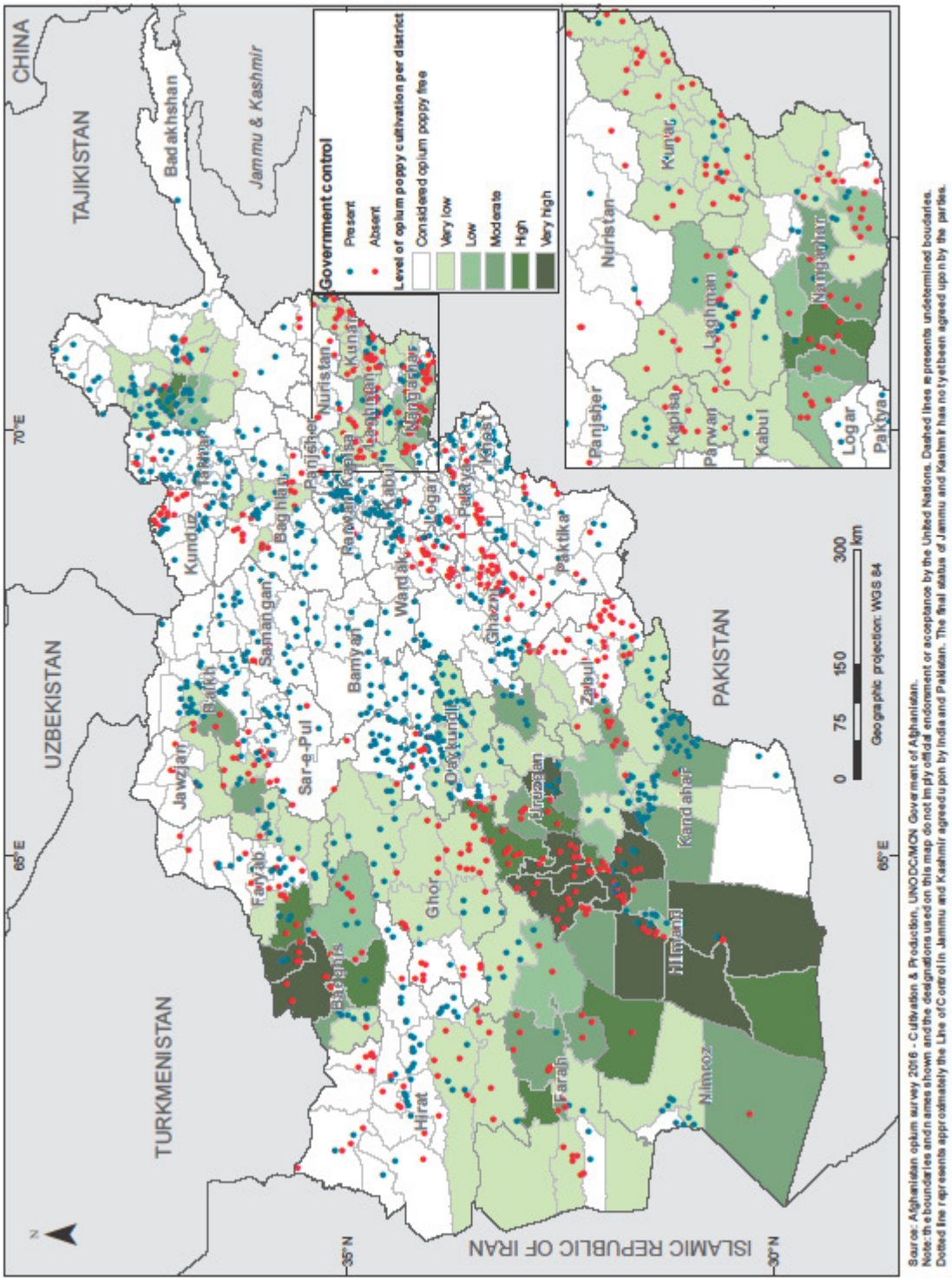

Within villages with opium poppy cultivation, the organized community (e.g., shura) seems to play a lesser role than in villages without opium poppy cultivation. Only 24 per cent of village headmen of opium poppy villages reported to have always or usually access to help via the organized community, whereas 51 per cent of headmen in non-opium-poppy villages reported the same.

**Figure 13: Access to help through the organized community (Shura), by opium poppy cultivation status, 2016**



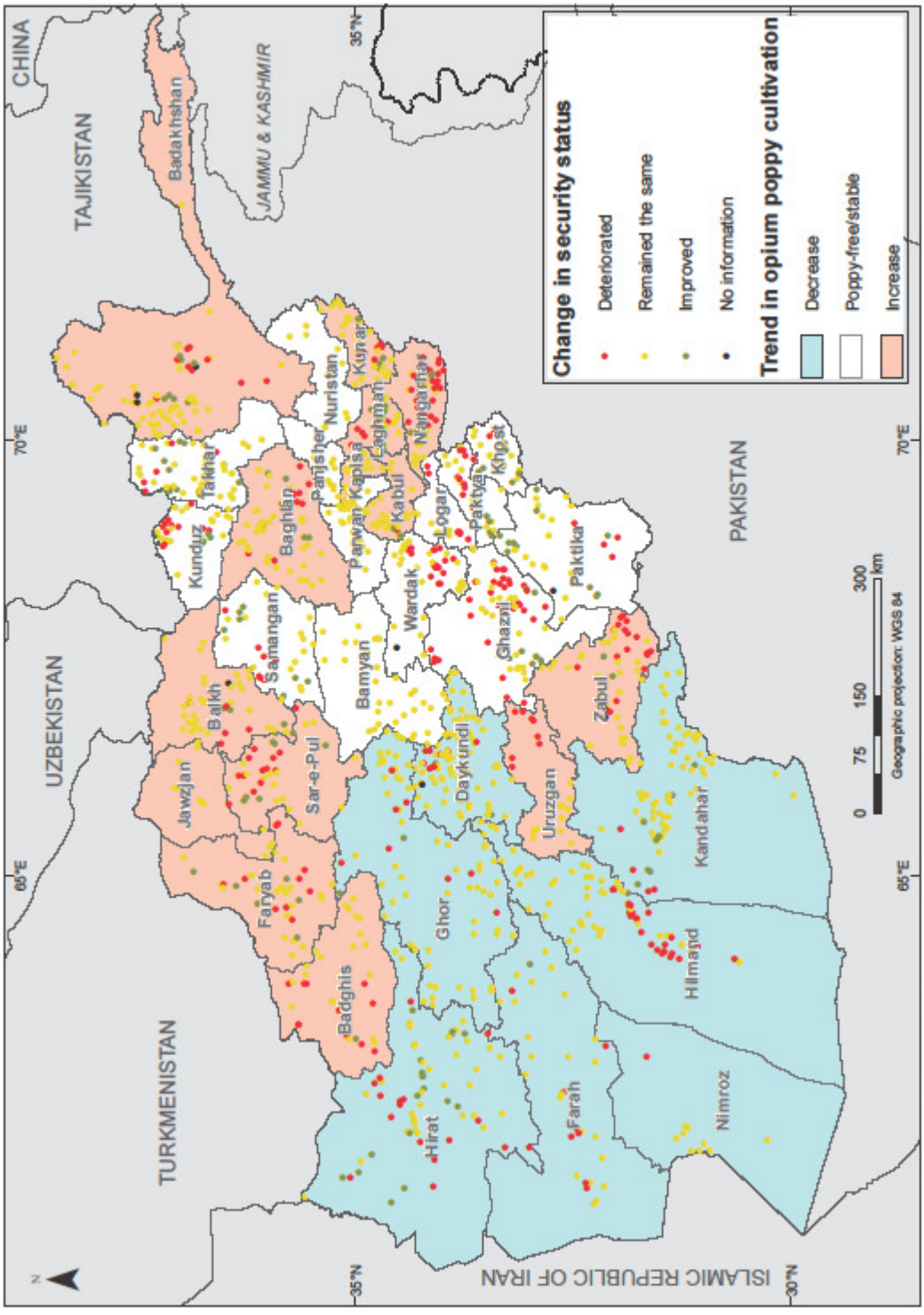

The elders/shura of a village play an important role in many aspects of the lives of farmers. When asked about the top three reasons for stopping or never engaging in opium poppy cultivation, 4 per cent of farmers who stopped cultivation in or before 2016 and 7 per cent of farmers who never cultivated opium poppy named bans by the elders/shura as a reason. More research is needed on the role the shura plays in farmers' decisions around opium poppy cultivation.

**Map 4:** **Government control and opium poppy cultivation, 2016**

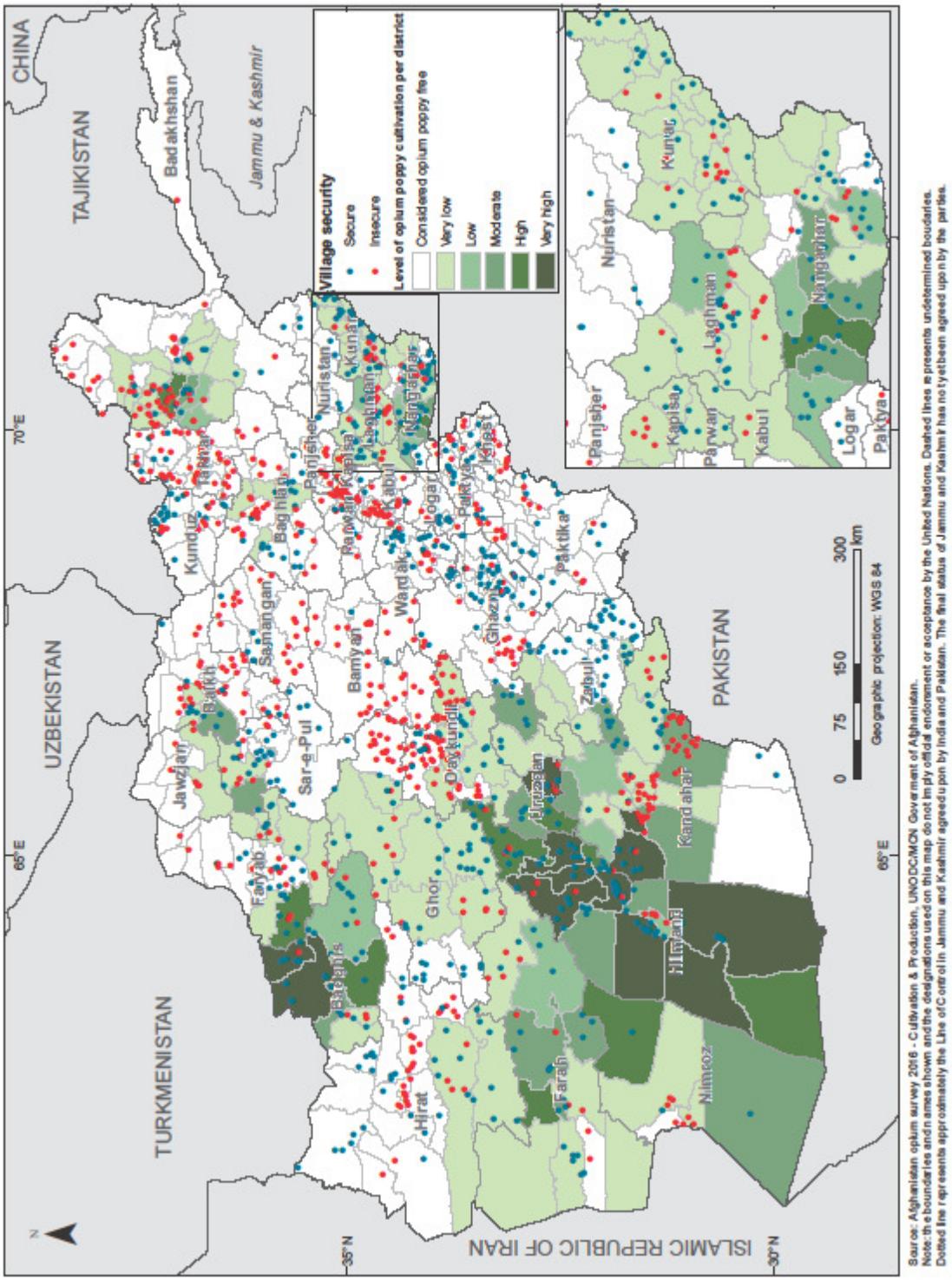



Source: Afghanistan opium survey 2016 - Cultivation & Production, UNODC/MCN Government of Afghanistan.
Note: the boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Dashed lines represents undetermined boundaries.
Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

**Map 5: Change of security levels as reported by village headmen and opium poppy cultivation trend, 2015-2016**



**Map 6: Security level[54] as indicated by village headmen and opium poppy cultivation, 2016**

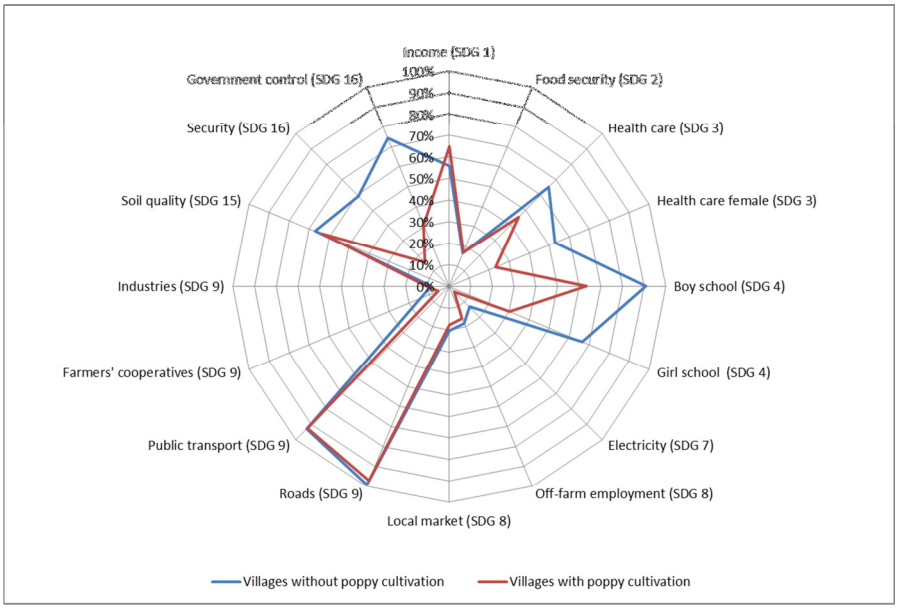



[54] Secure village: village headmen reported that the village was secure or very secure. Insecure: headmen reported that the village was "more or less" secure, insecure or very insecure.

## 3.5 Visualising the development gap

When comparing villages affected by opium poppy cultivation with other villages, it becomes apparent that opium poppy cultivation is strongly linked to more limited access to infrastructure and services which are essential to the operation of a society, as well as to more broadly defined development indicators such as security and government control.

**Figure 14: Selected indicators related to the SDGs and attainment status of villages** (percentage of villages)**, by opium poppy cultivation status, 2016**




*Note: a detailed description of all indicators is in the methodology section 5.2.*

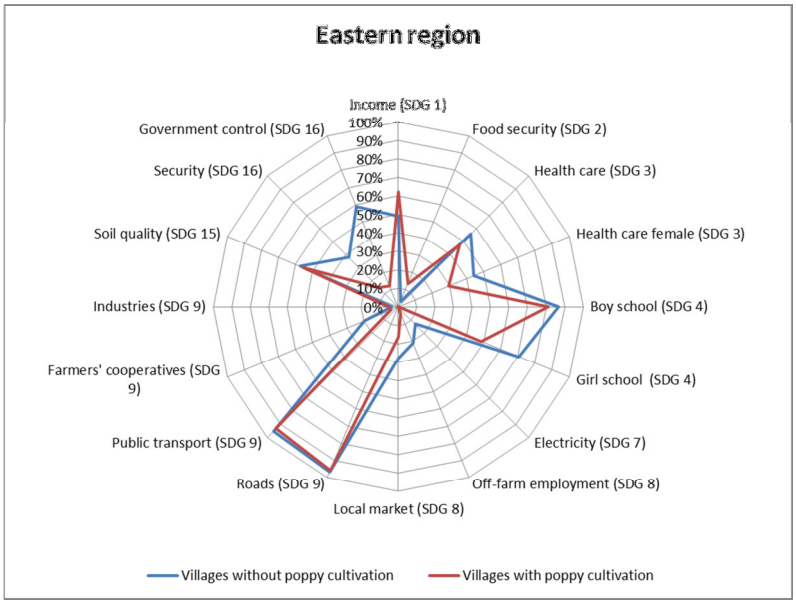
In almost all relevant development dimensions,[55] villages where opium poppy cultivation took place lagged behind villages without opium poppy cultivation in 2016. The most pronounced development gap could be found in indicators related to health (SDG 3), education (SDG 4), as well as government control and security (SDG 16). Only in terms of cash income (measured as percentage of villages with an average farmer cash income above the international threshold for extreme poverty), opium poppy-cultivating villages had an advantage when compared to non-opium-poppy villages.

A regional comparison reveals that the the regions face similar key development challenges, but to varying extents, with governance and security, as well as education and health care being the most affected indicators. However, the extent to which communities are affected differs widely. While in the Northern and Eastern regions, the differences in availability of schools for boys and girls are relatively small, this difference is more pronounced in the Western region and striking in the Southern region.

Security and government control are generally low in the Eastern region, which makes the gap appear smaller. In the South, however, security and government control are very low in opium poppy-cultivating villages and relatively high to very high in non-opium-poppy villages.

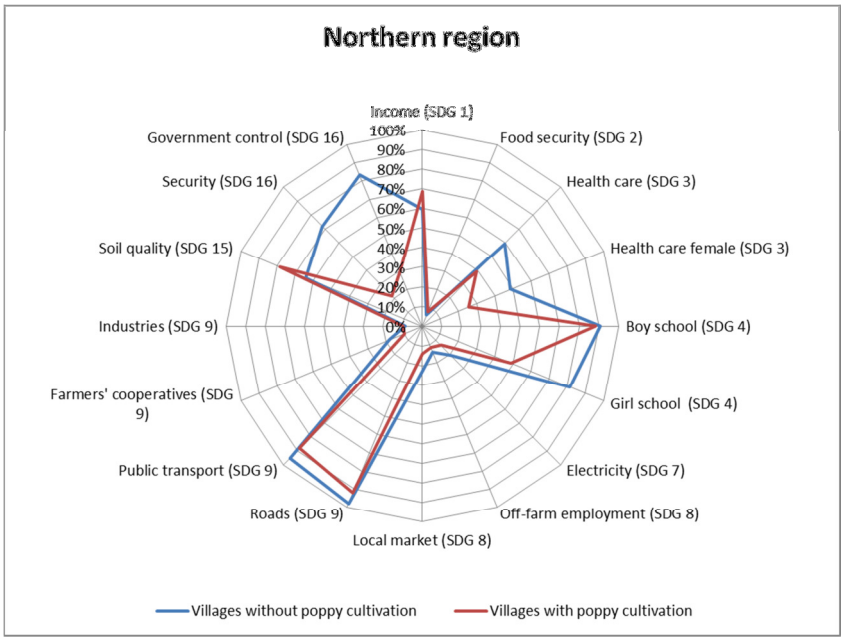
[55] A description of all indicators used in the graph is available in the methodology section.

**Figure 15: Selected indicators related to the SDGs and attainment status of villages in the Eastern region** (percentage of villages)**, by opium poppy cultivation status, 2016**



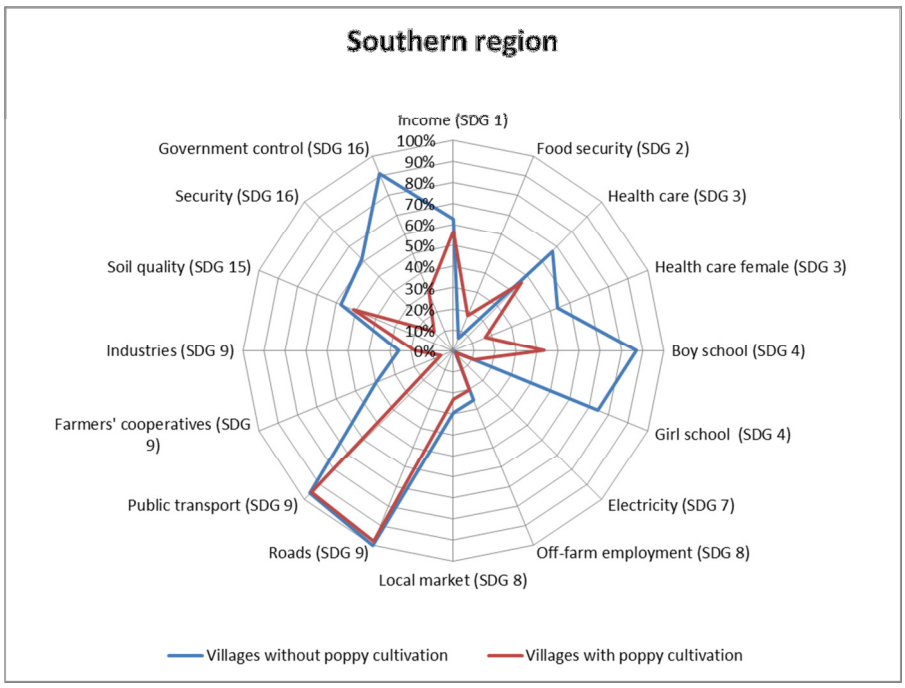

*Note: a detailed description of all indicators is in the methodology section 5.2.*

**Figure 16: Selected indicators related to the SDGs and attainment status of villages in the Northern region** (percentage of villages)**, by opium poppy cultivation status, 2016**



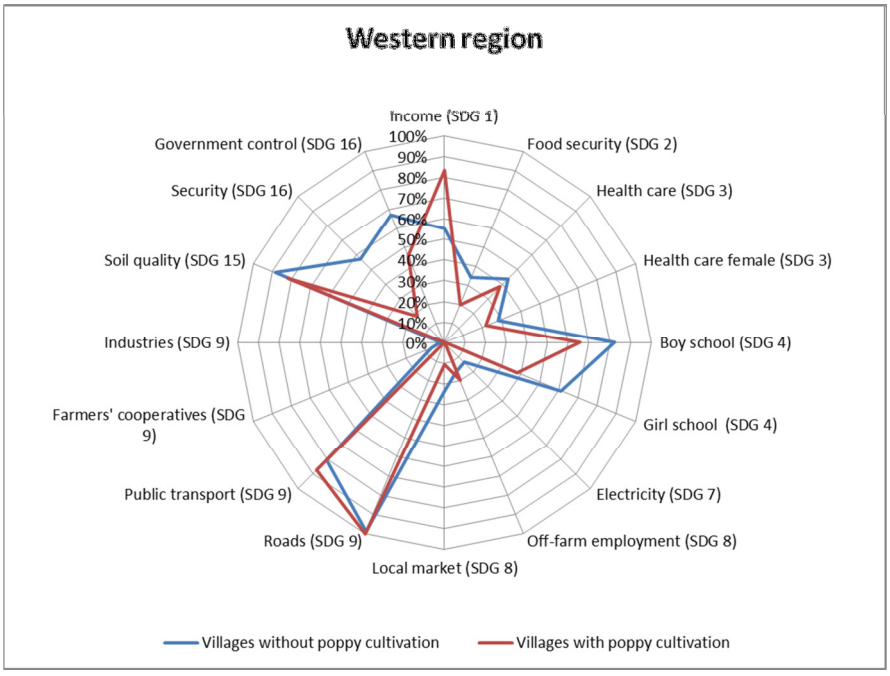

*Note: a detailed description of all indicators is in the methodology section 5.2.*

**Figure 17: Selected indicators related to the SDGs and attainment status of villages in the Southern region** (percentage of villages)**, by opium poppy cultivation status, 2016**



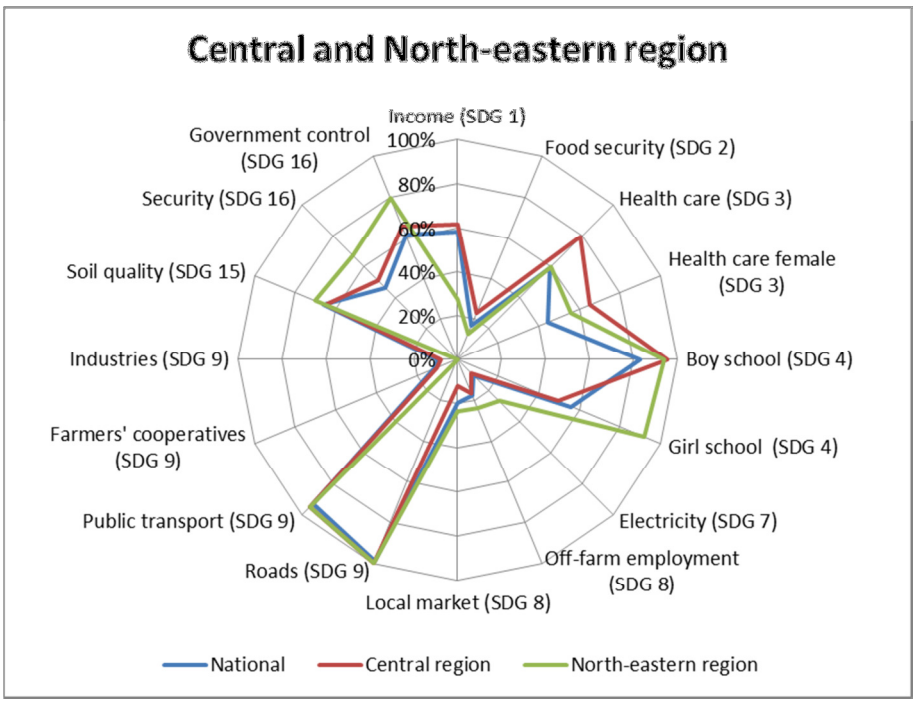

*Note: a detailed description of all indicators is in the methodology section 5.2.*

**Figure 18: Selected indicators related to the SDGs and attainment status of villages in the Western region** (percentage of villages)**, by opium poppy cultivation status, 2016**




*Note: a detailed description of all indicators is in the methodology section 5.2.*

**Figure 19: Selected indicators related to the SDGs and attainment status of villages in the Central and North-eastern region, and at national level** (percentage of villages)**, 2016**




*Note: a detailed description of all indicators is in the methodology section 5.2.*

The Central and North-eastern regions, where the number of opium poppy cultivating villages is too small to do a meaningful comparison between opium-poppy/non-opium-poppy villages, are signified by above average levels of security and government control (in particular the North-east). Moreover, levels of availability of health care and education seemed to be higher than the national average. The most striking difference is in income: the North-east has the highest proportion of very low income villages of all regions and is far below national average in that dimension.

A statistical analysis of the data revealed that the link[56] between opium poppy cultivation and absence of government control was strongest. Likewise, access to health care facilities, schools, and security, where the development gap was largest, were strongly linked with government presence, indicating that the level of government control may be a strong explanatory factor for the development gap.

## 3.6 The way forward

Due to the scale and the nature of the drug problem, the reduction of illicit crop cultivation depends on the achievement of broader development goals, such as well-established and strong state institutions for effective governance, and functioning social protection mechanisms. The Sustainable Development Goals bring a new vision to alternative development in Afghanistan and can guide a long-term strategy that intends to transform the development paradigm to ensure that all aspects of development are considered, including security, justice, good governance and the rule of law.

The MCN/UNODC survey results show that good security conditions and stable governance are associated with less opium poppy cultivation. This link has been observed in many areas where illicit crops are cultivated (for example, in Myanmar or Colombia) which are plagued by ethnic and other conflicts or political instability. The ongoing efforts of the Government to enhance

[56] Measured by Pearson correlation, p=0.41.

security and the rule of law may bring further improvements to development which can have a tangible impact and reduce opium poppy cultivation.

Income-generating alternatives to crop cultivation need to be viable and sustainable in order to decrease dependence on illicit crop cultivation. Illicit crop cultivation was strongly related to absence of access to basic infrastructure such as schools and health care services, which in turn were linked to security and government control. Thus, the development of physical and social infrastructure, in particular related to SDG 3 "Good health and well being" and SDG 4 "Quality education", as well as a strategy to reduce government control and security is needed for a sustainable reduction of opium poppy cultivation.

MCN/UNODC village surveys have shown that opium poppy cultivation takes predominantly place in areas where access of girls and women to education and health services was more limited than at national level.[57] Improving livelihoods through alternative development interventions can thus increase gender equality in areas affected by opium poppy cultivation. Women's empowerment, on the other hand, can have a measurable impact on the decision of a household to engage in or abstain from opium poppy cultivation.

The data collected during the MCN/UNODC women's survey supported the finding that education can increase the influence of women in a household on the decision whether to engage in opium poppy cultivation or not. The additional cash income from labour of women can reduce the economic pressure to cultivate poppy. However, the opportunities to do so may depend strongly on local circumstance, as many women of opium cultivating villages stated in previous MCN/UNODC work that out of cultural reasons men often do not want women to participate in the work force.[58]

Farmers have complex livelihood strategies and their decision to cultivate opium poppy is driven by various economic, environmental and social circumstances. Agricultural solutions need to take into account the pressure on land, soil degradation and water management, as well as distinct local characteristics such as the size of landholdings and availability of infrastructure.

Drug-control policies need to focus on improving rural economic diversification strategies, job creation and skills training for rural workers. The significant number of persons employed in opium poppy cultivation needs to find opportunities in the licit labour market – calling for programmes that address this group of often landless persons, as well. Moreover, such economic diversification strategies can specifically target women to strengthen their economic productivity and look for options for involving women increasingly in higher levels of value chains, in order to expand their decision making and livelihood opportunities.

The diversity of conditions and factors associated with the different levels of development and opium poppy cultivation need to be acknowledged and taken into account in the elaboration of local alternative development policies, as indicated in the UN Guiding Principles on Alternative Development. The evidence suggests that improvement in infrastructure and services can help to allow for opportunities for licit economic development and for a diversification of livelihood strategies, which in turn decreases the dependency of those communities on opium poppy income. The socio-economic, cultural and biophysical diversity in the country requires adaptive approaches that consider local circumstances and conditions in all stages of programme development.

Long-term political and financial support is essential to the success of alternative development. Direct participation by farmers and communities plays a key role in the design and planning of alternative development activities, especially in areas where no public institutions can fulfil such a role.

These goals can be achieved only if development policies can mainstream drug control strategies in those Afghan communities which are heavily affected or are at risk of being affected by opium poppy cultivation. At the same time polices aimed at reducing opium poppy cultivation can achieve sustainable results only if they mainstream development in their objectives. Based on

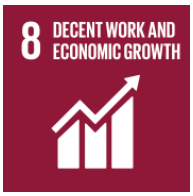
[57] See e.g. section on Social Development.
[58] See MCN/UNODC Afghanistan opium survey report 2015 – Socioeconomic analysis.

more than 40 years of experience and lessons learned, the UN Guiding Principles on Alternative Development recommend to "target illicit cultivation […], and address related factors, by alleviating poverty, by strengthening the rule of law and institutional frameworks, as appropriate, and by promoting sustainable development aimed at enhancing the welfare of the population" and to implement alternative development in concert with broader drug control policies, including demand reduction, law enforcement, illicit crop elimination and awareness-raising.

*Note: Children in Baghlan province, Afghanistan. Source: MCN/UNODC.*

# 4 Additional analyses and statistical annex on the socio-economic survey 2016

## 4.1 The value of the opiate economy in Afghanistan in 2016




In 2016, the gross value of the Afghan opiate economy was estimated to be US$ 3.02 billion (US$ 1.56 billion in 2015)[59]. An increase of opium production by 43 per cent together with an increase in heroin prices across the borders of Afghanistan almost doubled the value of the opiate related economy when compared to last year.

The potential gross value of the Afghan opiate economy represents all income generated by opium production and manufacturing within Afghanistan (including trafficking to the borders), and is the sum of the value of the domestic market and the value of opiates available for export. Its net value (US$ 2.9 billion) is considered to be most suitable for comparison with GDP, and is the gross value minus expenditures for imported precursor substances for heroin manufacture.[60] The net value of the opiate economy exceeds by far the value of the Afghan exports of licit goods and services in 2015.[61]

The gross value of exported opiates was estimated to be US$ 2.92 billion[62] in 2016. The value of exported opiates includes only the value of opiates traded across Afghanistan's borders, but no further income from onward trafficking beyond the country's borders, for example to Europe and other regions. The net value of opiates available for export (US$ 2.82 billion) is the gross value minus expenditure for imported precursor substances.

**Table 4: Estimated gross and net values of the opiate economy, 2016** (US dollars)

| | Gross value US$ (rounded) | Net value US$ (rounded) | Net value in relation to GDP |
|---|---|---|---|
| **Value of the opiate economy** | 3.02 billion (2.6-4.0 billion) | 2.9 billion (2.7-3.2 billion) | 16% |
| **Value of opiates potentially available for export** | 2.92 billion | 2.82 billion | 15% |
| **Farm-gate value of opium** | 898 million | : | 5% |
| **Value of domestic market** | 105 million | 101 million | 0.5% |
| **Export value of 1 kg of opium** | 688 | : | : |

*Note: Ranges are calculated based on different assumptions on the conversion of opium to morphine/heroin within Afghanistan. "Value of the opiate economy" refers to the sum of the value of the domestic market and the value of opiates believed to be exported. The net value refers to gross value minus costs for imported precursor substances needed for heroin manufacture. *In the farm-gate value estimation and in the value of a kilogramme of exported opium, imported goods are not considered; therefore no net estimate is available. Details on the calculation and the underlying assumptions are provided in the methodology section.*

[59] It should be stressed that despite ongoing improvements in the estimates of the opiate economy through additional information-gathering activities, economic calculations remain far less robust than estimates of the area under cultivation, opium yield and opium production. The calculations presented here are intended to provide reasonable orders of magnitude of the income generated rather than exact amounts.

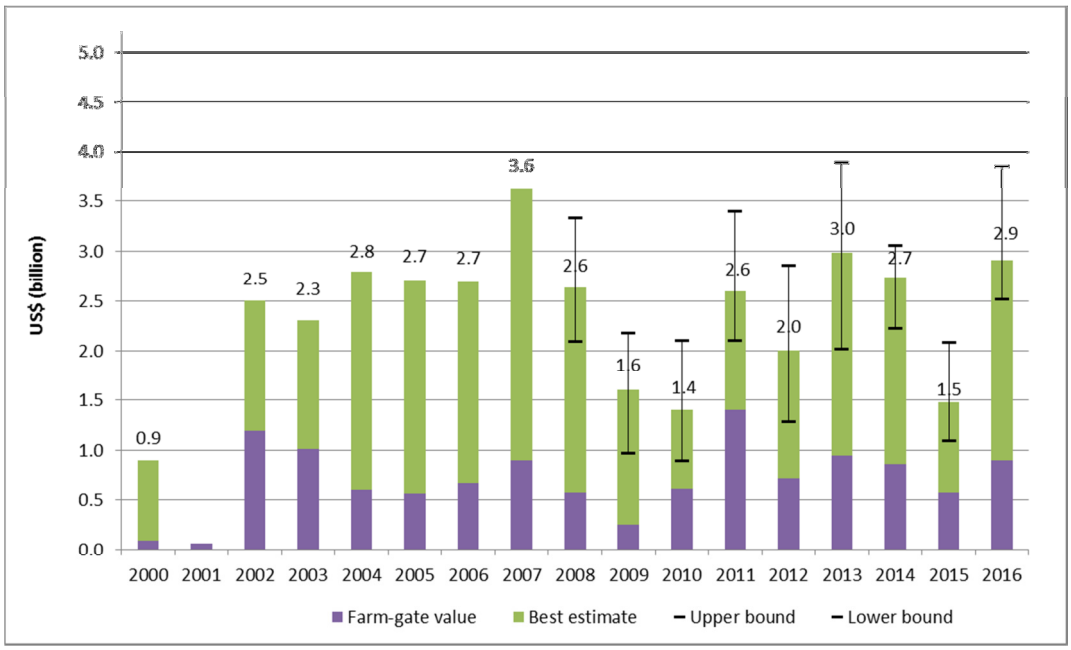
[60] Net export value (and the net value of the domestic market) accounts for import costs associated with the production of morphine and heroin. It therefore provides a proxy for the net amount of revenue entering Afghanistan generated by opiate exports. Import costs, as far as they are known, are deducted from the gross export value of Afghan opiates. However, since many import cost factors are not well understood or known, net value only considers the costs of imported precursors that constitute an important cost element of morphine and heroin production.

[61] Exports of licit goods and services was estimated to be 7.3 per cent of GDP in 2015. World Bank, World Development Indicators.

[62] Calculating the value of exported morphine/heroin is limited by the fact that the product leaving laboratories in Afghanistan may undergo further processing (for example, adulteration) before reaching assumed points of sale in neighbouring countries. These factors cannot be estimated at present, but it is reasonable to assume that the use of cutting agents increases the profitability of exporting heroin/morphine, and not taking such factors into account could lead to an underestimation of the export value of the opium economy in Afghanistan.

The gross value of opiates available for exports has presented erratic patterns in recent years. The production of opium, like any other agricultural product, is highly dependent on meteorological and climatic conditions. Furthermore, opium prices have been subject to external shocks, resulting in price hikes as in 2002 (Taliban opium ban) and 2011 (crop failure in 2010), causing spikes in the value of the opium economy in sequential years.

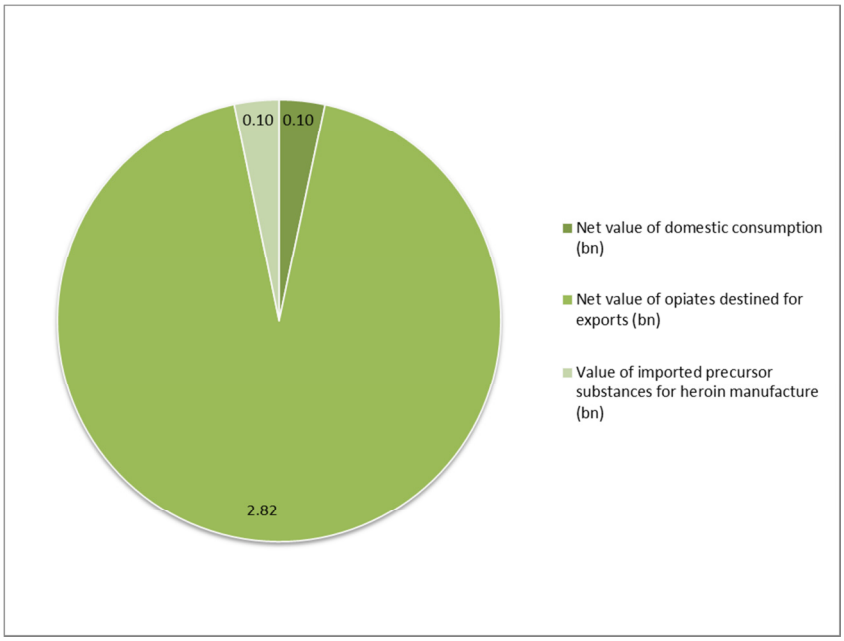
**Figure 20: Potential gross export value of opiate production, and farm-gate value, 2000-2016** (US dollars)




*Sources: UNODC (2003): The Opium Economy in Afghanistan; MCN/UNODC: Afghanistan opium surveys 2003-2016. Note: The bars indicate the upper and lower margins of the range of the estimated value.*

The gross value of the domestic market for heroin and opium was much smaller than the value of exported opiates. In 2016, the estimated worth of opiates consumed in Afghanistan was US$ 105 million (US$ 100 million net value), which was - due to increased retail prices - higher than in 2015 (US$ 80 million).

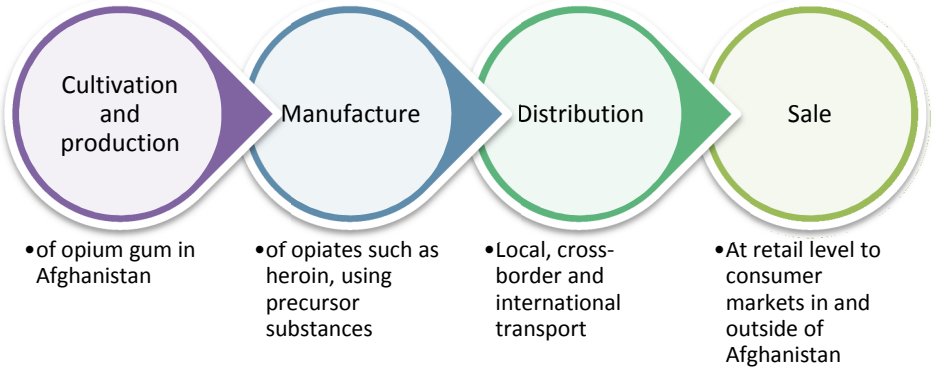
**Figure 21: Breakdown of the potential gross value** (US$ 3.02 billion) **of the Afghan opiate economy, 2016**



### 4.1.1 The value chain of Afghan opiates

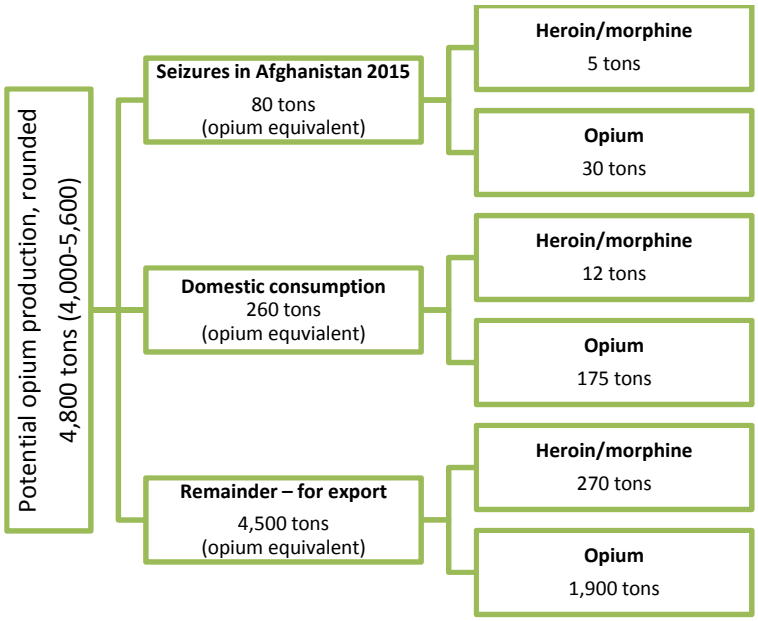
The production and trade with Afghan opiates is a business, primarily motivated by profit. Opiate manufacturing and trade can be divided into four stages: production of opium gum, manufacturing of opiates, distribution and retail.[63] At each stage, income is generated that benefits different players. While cultivation of opium poppy and production of opium gum occur primarily in Afghanistan, distribution and final retail most often occur in major destination markets such as Europe.

**Figure 22: Value chain of Afghan opiates**




The Afghanistan opium production can be broken down into seized opium, and opium destined for the domestic market and for exports in form of either heroin or opium. At each of these stages, income is generated, either by production, manufacture or onward trafficking.

**Figure 23: Opiates in Afghanistan (rounded), by destination, 2016**




*Seizures in 2015 are taken as a proxy for 2016 since the total amount of drugs seized in the current year is not yet known. Opium equivalent is heroin/morphine production converted by a conversion factor as described in "Afghanistan opium survey 2016 – cultivation and production". Consumption estimates are based on 2009 drug use data and are converted to opium equivalent with the conversion ratio used in that year. With the exception of potential opium production, ranges have been omitted for brevity.*

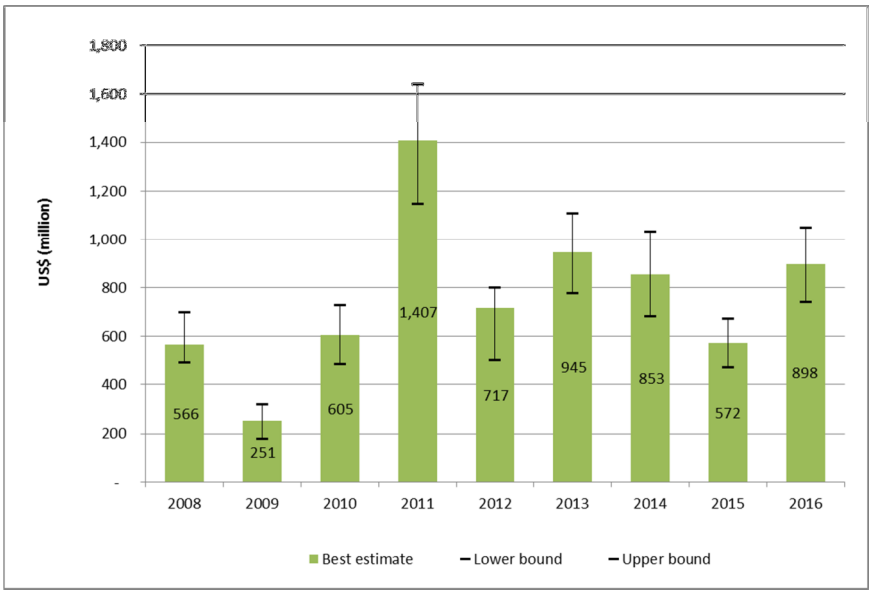
[63] See as well Financial Action Task Force (FATF), 2014, *"Financial Flows linked to the production and trafficking of Afghan Opiates"*

### 4.1.2 Cultivation and production of opium gum: The farm-gate value of the opium production

The farm-gate value of opium represents the potential gross amount earned from opium by farmers in a given year. It is the value of the first link of value chain, of cultivation and production of opium gum. The farm-gate value is an important measure of the added value generated in rural communities by the cultivation and harvesting of opium. In contrast to the proceeds of onward processing and trafficking, which benefit external individuals, the proceeds of opium poppy cultivation most likely remain within rural communities.

Amounting to US$ 898 million in 2016 (US$ 740-1,050 million) in 2016, the estimated farm-gate value of opium production increased by 57 per cent from its 2015 level (US$ 572 million). The increase in farm-gate value was mainly due to the 43 per cent increase in opium production this year.

**Figure 24: Farm-gate value of opium production in Afghanistan, 2008-2016** (US$ million)

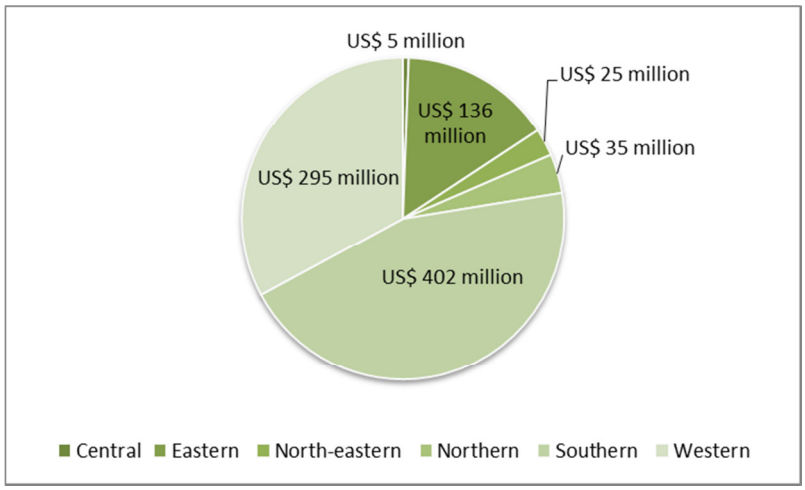



As a comparison, the value of the total agricultural sector of Afghanistan was estimated at 4.1 billion[64] in 2015/16, which means that the value of opium gum produced (farm-gate value) corresponded to roughly 22 per cent of the value of all income generated by the agricultural sector in this year.

The regional differences are substantial. Farmers in Hilmand, the country's largest opium-producing province, earned some estimated US$ 330 million alone, which was equivalent to 37 per cent of the total farm-gate value of opium production in Afghanistan in 2016; an increase of 38 per cent from 2015 (US$ 240 million).

[64] Central Statistical Organization, Afghanistan

**Figure 25: Aggregated gross income of farmers (farm-gate value) from opium poppy, by region, 2016** (US$ million)




### 4.1.3 Labour for poppy harvesting and daily wages

Opium poppy harvesting is labour intensive. In 2016, village headmen were asked to provide the average number of lancers hired per jerib opium poppy cultivation, average number of days spent by households on opium gum harvesting and the average wages paid to poppy lancers.

The estimated average[65] number of lancers hired per jerib was 4.1, the estimated number of days spent for lancing 11.4 and the average daily wage was US$ 8.4. Combining these estimates, opium poppy cultivation in 2016 provided labour for 47 million[66] person days or an equivalent of 235,100[67] full time jobs. The combined wages for poppy labour amounted to US$ 396 million or 44 per cent of the farm-gate value of opium.

The availability of opium poppy lancers or the lack thereof has been reportedly a limiting factor for opium poppy cultivation in some regions in Afghanistan.[68]

**Table 5: Daily wage rates for different activities in Afghanistan, 2011-2016[69]**

| Activity | Daily wage rate (US dollars) | | | | | |
|---|---|---|---|---|---|---|
| | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
| **Labour (roads, construction, etc.)** | 5.6 | 5.7 | 5.6 | 5.4 | 5.0 | 4.5 |
| **Lancing/gum collection** | 12.6 | 11.7 | 9.8 | 9.4 | 8.5 | 8.4 |
| **Poppy weeding** | 6.6 | 5.7 | 6.2 | 5.7 | 5.2 | 4.6 |
| **Wheat harvesting** | 6.6 | 6.4 | 5.9 | 5.6 | 5.6 | |
| **Farm labour (non-opium-poppy)** | | | | | | 4.0 |

*Note: Opium poppy related wages are weighted averages by regional cultivation estimates.*

Alternatives to poppy lancing are scarce. Village headmen were asked to assess how difficult it was to get a paid, non-farm labour job inside the village. Overall, 83 per cent of headmen assessed that it was difficult or very difficult to find non-farm labour inside the village and only 2 per cent assed that it was easy to find. No significant differences between poppy and non-opium-poppy villages could be found. Moreover, daily wages for poppy lancing continued to be higher than other daily wages.

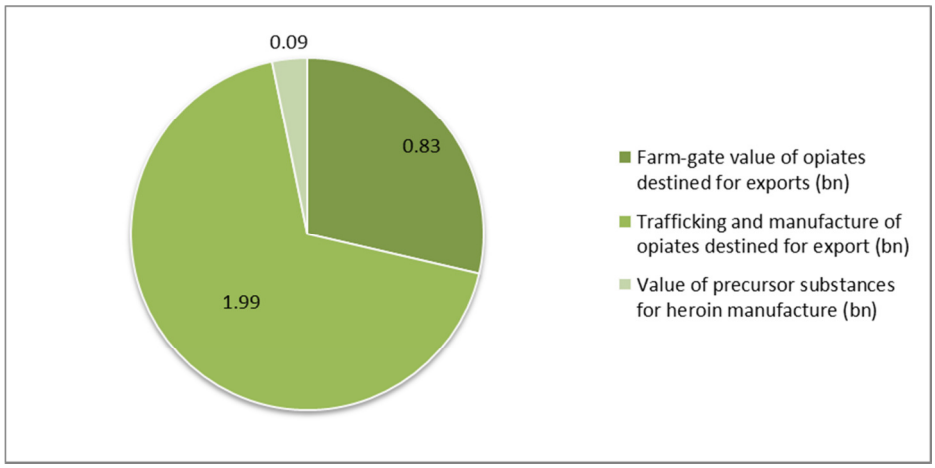
[65] All averages are weighted averages by regional area under cultivation.
[66] Calculated with non-rounded numbers.
[67] Full time job assumed to have 200 working days a year.
[68] David Mansfield, Paul Fishstein and OSDR, 2016. "*Time to Move on: Developing an Informed Development Response to Opium Poppy Cultivation in Afghanistan*"
[69] Local wages were reported in a number of different currencies, including AFN, Pakistani rupees and Iranian rials, which complicates any year-on-year comparison as exchange rates can be subject to significant variations.

### 4.1.4 Manufacture, trafficking and distribution within Afghanistan

Within Afghanistan, the by far the largest share of income is generated by opiate transformation and exports to neighbouring countries. The proceeds of traffickers through the processing of opium into morphine/heroin and through the export of processed and unprocessed opiates is the net value of all opiates destined for export after the opium left the farm (US$ 1.99 billion). It is the gross value of all opiates destined for export (US$ 2.92 billion) without the farm-gate value of opium and the costs for imported precursor substances.

The net proceeds made by Afghan traffickers after opium left the farm was twice as much when compared to 2015 (US$ 0.92 billion). Good yields did not only increase the income of Afghanistan's opium farmers, but also substantially contributed to the revenue made from onwards processing and exports.

**Figure 26: Breakdown of the gross value of opiates destined for export** (US$ 2.92 billion) **of the Afghan opiate economy, 2016**




## 4.2 Opium poppy farmers in 2016

### 4.2.1 Frequency of opium poppy cultivation

All farmers who cultivated opium poppy in 2016 were asked if they have cultivated in previous years. Sixty-three per cent of all poppy farmers have cultivated opium poppy in at least four out of the five years between 2011 and 2015 (frequent poppy farmers). The remaining 37 per cent of farmers have cultivated opium poppy in less than four years in this time period (infrequent poppy farmers).

Farmers' engagement in opium-poppy cultivation differed by region. For example, in the Southern and Eastern regions, the majority of opium-poppy growers cultivated opium poppy frequently (73 per cent and 88 per cent, respectively). In contrast, in the Western region, less than half of opium poppy farmers cultivated frequently (47 per cent). In the Central region, where opium poppy cultivation is persistent at small levels since many years, almost all farmers cultivate opium frequently. In the Northern region, where recent increases have been observed, the majority of farmers was classified as infrequent, which included farmers that took up cultivation in the previous three years.

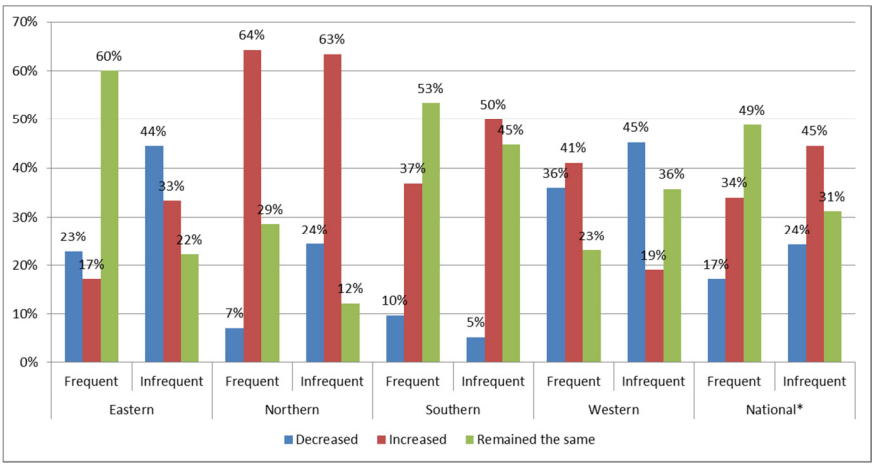
**Table 6: Percentage of opium poppy farmers by frequency of cultivation, 2016**

| Region | Frequent cultivation | Infrequent cultivation | Number of farmers in sample |
|---|---|---|---|
| **Central** | 91% | 9% | 11 |
| **Eastern** | 88% | 13% | 80 |
| **North-eastern** | 45% | 55% | 20 |
| **Northern** | 23% | 77% | 62 |
| **Southern** | 73% | 27% | 144 |
| **Western** | 47% | 53% | 83 |
| **National*** | 63% | 37% | 400 |

*Based on self-reported data from a convenience sample of opium-poppy farmers (n=400). Frequent cultivation: Cultivation in 2016 and at least in 4 years between 2011 and 2015; Infrequent cultivation: Cultivation of opium poppy in 2016 and less than 4 years between 2011 and 2015. National average is weighted according to the actual number of villages per region. Number of farmers interviewed is the number of complete observations available.*

Depending on their needs and opportunities, opium-poppy farmers vary their total areas under opium-poppy cultivation over time, either by using their own land or other modalities (tenancy or sharecropping). Most notably, in the Northern region, were large relative increases in area under opium poppy cultivation were observed, most farmers (64 per cent of frequent poppy farmers and 63 per cent of infrequent poppy farmers) reported increases in the land dedicated to opium poppy. In the Southern region, where levels of opium poppy cultivation have been stable, more than half of frequent poppy farmers, who constituted the majority of opium poppy farmers in this region, reported that the area devoted to poppy remained the same, and 10 per cent reported that the area under opium poppy cultivation decreased. In the South, there seems to be a core of continuously growing opium poppy farmers, while in other regions, farmers were more frequently either new-comers or cultivate opium poppy more opportunistically.

**Figure 27: Changes of individual area under cultivation of continuous opium-poppy farmers in 2016 with respect to 2015, by region** (percentage of farmers)




*The North-eastern and Central regions were excluded from the analysis, because of a very small number of samples. The national average considers farmers of all regions. Poppy farmers were asked if the total area under opium poppy cultivation has increased or decreased when compared to the previous year.*

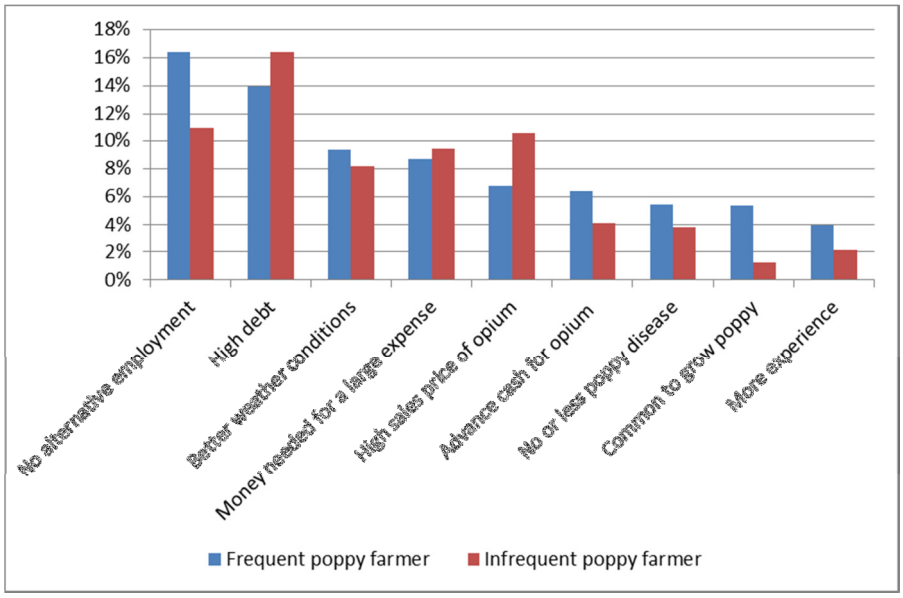
Overall, the most common reasons[70] reported for increasing area under opium poppy cultivation were economic related such as lack of non-opium-poppy related jobs/unemployment, an increase in debt which needed to be repaid, followed by large expenses (e.g. wedding) that needed to be covered. Better climatic conditions (e.g. no drought) were reported mainly by farmers in the South.

The most common reason for decreasing area under opium poppy cultivation was "It is against Islam", followed by mostly agricultural related reasons: "Good results with other crops", "increase in opium poppy pests or diseases", and worse climatic conditions. Other important reasons were

[70] Farmers were asked for the three most important reasons for increasing/decreasing area under opium poppy cultivation.

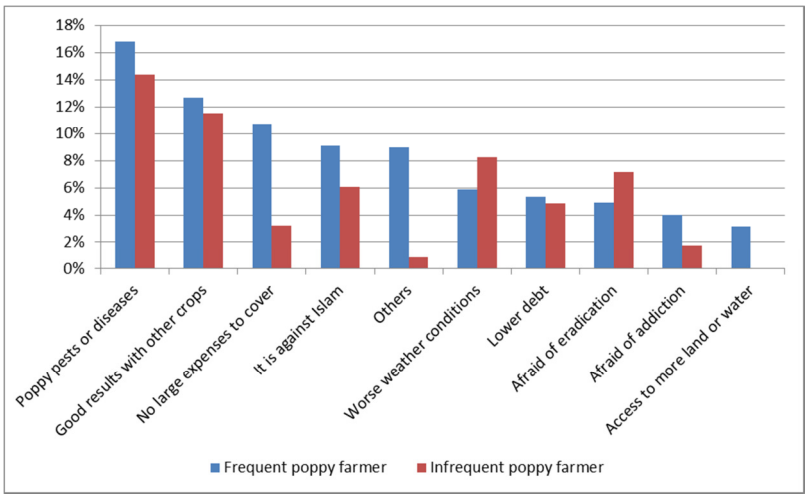
the absence of large expenses (e.g. wedding) and worse climatic conditions, fear of eradication, government ban and fear of addiction of family members.

**Figure 28: Main reasons for increasing area under opium poppy cultivation reported by poppy farmers in 2016** (percentage of farmers)




*Note: Farmers were asked for the 3 most important reasons for increasing area under cultivation in the growing season 2016 as compared to 2015. Data reflects all mentions of a use, regardless of its rank.*

**Figure 29: Main reasons for decreasing area under opium poppy cultivation reported by poppy farmers in 2016** (percentage of farmers)




*Farmers were asked for the 3 most important reasons for decreasing area under cultivation in the growing season 2016 as compared to 2015. Data reflects all mentions of a use, regardless of its rank.*

### 4.2.2 Food security


Levels of food insecurity and undernutrition are persistently high in Afghanistan. In 2014, about 33 per cent of the total population – some 9.3 million people –faced chronic or transitory food insecurity.[71] Among them, an estimated 3.4 million (12 per cent) were severely food insecure, and 5.9 million (21 per cent) were moderately food insecure.

In 2015, the seasonal food security assessment May-June 2015[72] used a different

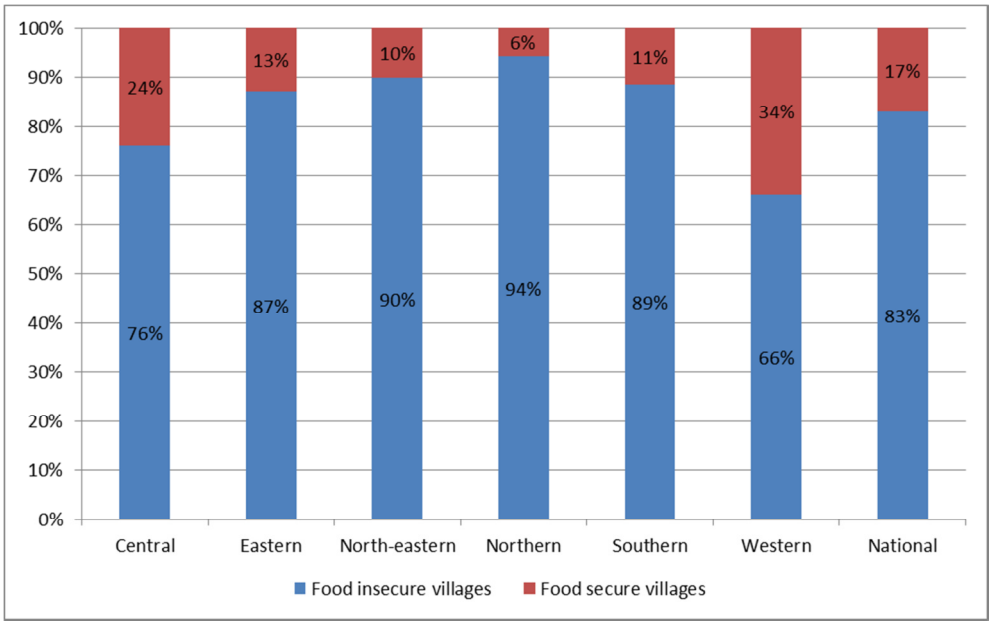
[71] CSO, *"Afghansitan Living Conditions Survey 2013-2014"*; http://www.cso.gov.af/en/page/1500/1494/nrav-report

measure and found 5.9 per cent of the total population (both urban and rural) to be severely food insecure. Another 27.5 per cent were found to be moderately food insecure that is in a situation where they cannot sustainably cope with shocks and are resorting to asset depleting strategies in order to cater to their needs. At provincial level Ghor (44 per cent severely insecure, and 78 per cent either severely or moderately insecure) and Paktika (23 per cent severely insecure, and 62 per cent either severely or moderately insecure) stood out as requiring immediate attention. Helmand, followed by Nimroz, Laghman, and Kapisa were named as the most vulnerable among moderately food insecure provinces.

In the 2016 MCN/UNODC village survey, headmen were asked about an estimate of the number of households in the village who experienced food insecurity for more than 6 months in the past 12 months. Based on these estimates, 21 per cent of households experienced some form of food insecurity in 2015/2016. Comparing the situation in opium poppy growing villages and non-opium-poppy growing villages, did not show a significant difference.

Only in 17 per cent of villages, village headmen reported that all households had enough food in the past 12 months (no significant difference between poppy and non-opium-poppy cultivating villages). Regionally, the highest share of food secure villages was found in the Western region (34 per cent), the lowest share in the Northern region (6 per cent).

**Figure 30: Percentage of food secure and insecure villages according to headmen, by region, 2016**



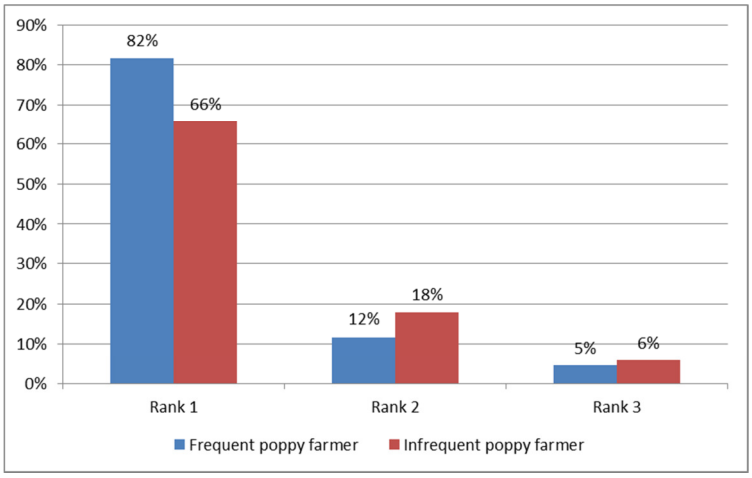

*Note: A village is considered food secure if the village headmen reported that all households had enough food in the past 12 months. A village where at least one household experienced food insecurity according to the headmen is considered food insecure.*

While the data collected in the village surveys is a crude indicator only, as it represents estimates of the headmen of the share of households experiencing food insecurity, it shows that food security is low in Afghanistan. In terms of magnitude of the problem, there is no significant difference between poppy and non-opium-poppy cultivating villages.

Notable is, though, that food is ranked first by 82 per cent of frequent poppy farmers and 66 per cent of infrequent poppy farmers when asked how their income from opium poppy is used. Opium poppy played an important role in ensuring food security of farmers who engage in opium poppy cultivation.

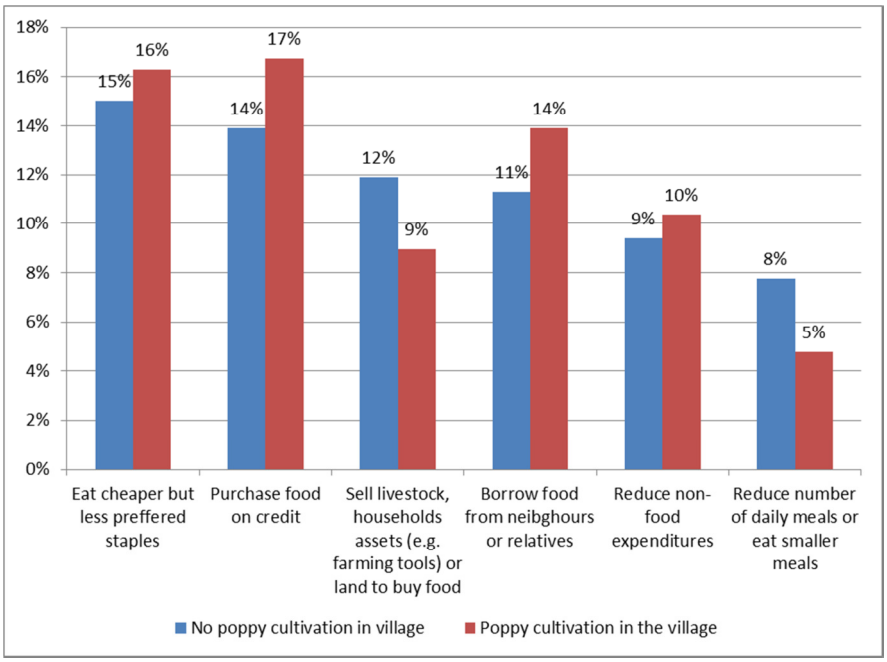
[72] Food security and agricultural cluster, Afghansitan, "Seasonal Food Security Assessment May-June 2015", http://reliefweb.int/sites/reliefweb.int/files/resources/SFSA_2015_Final_0.pdf

**Figure 31: Percentage of opium poppy farmers naming food as one of the three main uses of income from opium, by rank, 2016**




Among the top three coping strategies village headmen reported were to eat cheaper or less preferred food, purchase food on credit, as well more drastic measures such as selling livestock or other household assets and to reduce the number of daily meals or eat smaller portions. The more drastic measures were reported more frequently among non-opium-poppy villages (see graph). A possible explanation is that poppy villages had on average a higher cash income than non-opium-poppy villages, which may have allowed for a more flexible reaction when facing food insecurity.

**Figure 32: Strategies to cope with food deficiency as reported by village headmen, by opium poppy cultivation status, 2016**




*Note: Village headmen were asked for the three main strategies that villagers used for coping with food deficiency. Data reflects all mentions of a reason, regardless of its rank.*

However, not only farming households are affected by food insecurity. The Afghanistan Living Conditions Survey (ALCS) in 2014[73] found that households depending on opium wage labour were the group with highest levels of food insecurity (78.7 per cent) and with very high levels of poor asset holding (72.4 per cent). The work force required for poppy lancing is considerable – poppy cultivating farmers reported to hire an average of 4 persons per jerib (20 persons per hectare) for the opium harvest. Only little information is available on this specific group, however,

[73] Afghanistan Living Conditions Survey 2014-2015, Central Statistical Organization Afghanistan

when discussing the replacement of opium poppy by other income sources of farming households, the employment opportunities it provides need to be kept in mind.

### 4.2.3 Sizes of landholdings and modality of tenure

The size of land available to a farmer proved to be relevant in explaining important livelihood indicators such as food stocks or income.[74] Smallholders have precarious livelihoods, as they are vulnerable to both market and agricultural shocks, and too often have to resort to selling their productive assets – including land – in order to cope with shocks.

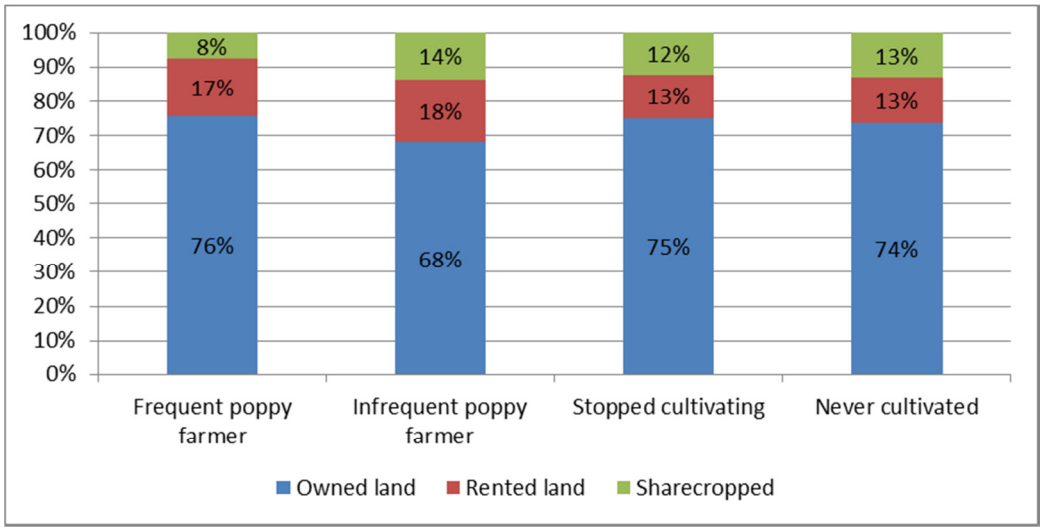
**Table 7: Average size of landholding by region and type of farmer (jerib), 2016**

| | Eastern region | Northern region | Southern region | Western region | National average |
|---|---|---|---|---|---|
| **Frequent poppy farmer** | 3.1 | 29.6 | 16.3 | 15.3 | 13.5 |
| **Infrequent poppy farmer** | 4.2 | 28.6 | 35.9 | 10.6 | 24.6 |
| **Stopped cultivating** | 3.9 | 42.0 | 27.2 | 13.6 | 21.2 |
| **Never cultivated** | 3.7 | 32.5 | 18.4 | 13.3 | 18.1 |

*Note: Central and North-eastern regions have been excluded from the regional analysis, but are considered in the national average. Five jerib are roughly one hectare.*

In 2016, different types of farmers had only little differences in the composition of land available. The highest share of rented land or sharecropping was found in infrequent opium poppy farmers.

**Figure 33: Composition of landholding by modality and type of farmer, 2016**




### 4.2.4 Farmers' annual income, per-person income and share of very low income villages

Opium-poppy farmers in Afghanistan reported on average a higher cash income[75] than farmers who have stopped cultivating opium poppy in or before 2016, and than farmers who have never cultivated opium poppy. Among opium poppy farmers, those farmers who cultivate opium frequently[76] reported a higher cash income than farmers who cultivate infrequently.[77] The principal differences held at regional level as well, with exception of the Eastern region, where

[74] Food security and agricultural cluster, Afghanistan. *"Seasonal Food Security Assessment, 2015"*. The study found that the size of the landholding seemed to be more relevant than the type of property right (whether shareholding, tenancy or land ownership).
[75] Self-reported net income.
[76] Cultivation in 2016 and at least in 4 years between 2011 and 2015.
[77] Cultivation of opium poppy in 2016 and less than 4 years between 2011 and 2015.

infrequent poppy farmers reported a smaller cash income than all other types of farmers interviewed.

**Table 8: Average self-reported annual household income by region and type of farmer (US$), 2016**

| | Eastern region | Northern region | Southern region | Western region | National average |
|---|---|---|---|---|---|
| **Frequent poppy farmer** | 2,900 | 2,500 | 4,500 | 1,900 | 3,800 |
| **Infrequent poppy farmer** | 2,000 | 3,600 | 4,800 | 1,900 | 3,300 |
| **Stopped poppy growing** | 2,500 | 1,800 | 4,100 | 1,800 | 2,800 |
| **Never cultivated poppy** | 2,600 | 2,300 | 3,800 | 1,700 | 2,600 |

*Note: Central and North-eastern regions have been excluded from the regional analysis, but are considered in the national average.*

Opium poppy cultivation generates income in many forms in rural communities. Comparing average reported income of all farmers interviewed in a village (not only poppy farmers) can yield insights on the situation of farmers in villages affected by opium poppy cultivation in comparison to villages which were not affected. Adjusting for household size yields a per person income that takes into account that average household sizes[78] differ across the country.

The reported cash income[79] of farmers affected by opium poppy cultivation was on average higher than the cash income reported by farmers who were not affected by opium poppy cultivation, as well. This held across regions, with exception of the Eastern region. Farmers are considered being affected if they either cultivated opium poppy themselves in 2016 or lived in villages where opium poppy cultivation was present.

Overall, farmers living in villages affected by opium poppy cultivation were better off than farmers in villages without opium poppy cultivation. The difference is in particular pronounced in the Southern region, where opium poppy cultivation is very wide-spread with exception of northern Day Kundi, where villages not affected by opium poppy cultivation are geographically concentrated.

**Table 9: Average annual household income per village and per-person income per village, by region and type of village (US$), 2016**

| | Average farmers' household income (US$) in villages | | Average per-person income (US$) in villages | |
|---|---|---|---|---|
| | Without opium poppy cultivation | With opium poppy cultivation | Without opium poppy cultivation | With opium poppy cultivation |
| **Eastern** | 2,700 | 2,600 | 200 | 200 |
| **Northern** | 2,200 | 2,700 | 250 | 270 |
| **Southern** | 2,700 | 4,500 | 200 | 360 |
| **Western** | 1,700 | 1,800 | 210 | 240 |
| **National** | 2,400 | 3,400 | 230 | 300 |

** Note: Average household size is based on reports of village headmen. Annual income is a self-reported net income. Because of a small number of samples, the Central and North-eastern regions have been excluded from the regional analysis, but are considered in the national average.*

[78] As reported by village headmen.

[79] In poor rural communities, cash income is only one component of how villagers cover their basic needs. In subsistence agriculture the typical household has a range of assessts such as land or livestock to produce a large share of food and other commodities for self-consumption. The data collected during the MCN/UNODC village surveys cannot capture this portion of household income.

Considering household sizes has further implications. When comparing the annual income per person against the international threshold for extreme poverty line at US$ 1.25 per person per day at PPP,[80] the cash income of many of the surveyed farmers remained below that threshold.

Overall, the average per person cash income in 42 per cent of all villages was below the international threshold for extreme poverty. Among villages affected by opium poppy cultivation, the income in 33 per cent of all villages was below the poverty line, in villages not affected by opium poppy cultivation the percentage was 45 per cent. In a regional comparison, the North-eastern region stood out as the region with the highest percentage of very low income villages (74 per cent), followed by the Eastern region (47 per cent).

It has to be noted that using household income as measurement for poverty has its limitation. In poor rural economies with a substantial variability of income associated with seasonality, household consumption has been found to be a better indicator of current standards of living, using for example the "Cost of Basic Needs" (CBN) approach.[81]

**Table 10: Proportion of very low income villages by region** (per cent)**, 2016**

| Region | Among all villages | Among with opium poppy cultivation | Among without opium poppy cultivation |
|---|---|---|---|
| **Central** | 37% | : | : |
| **Eastern** | 47% | 41% | 53% |
| **North-eastern** | 74% | : | : |
| **Northern** | 38% | 29% | 42% |
| **Southern** | 40% | 36% | 45% |
| **Western** | 32% | 14% | 43% |
| **National** | 42% | 33% | 45% |

*Note: Very low income villages defined as average per-person cash income below the international threshold for extreme poverty. Because of a very low number of samples the Central and North-eastern region have been excluded from the regional analysis.*

### 4.2.5 Usher on licit crops

When discussing income of rural households, usher payments of farmers need to be considered. Usher denotes a tax on licit products, usually about 10 per cent, payable on the harvest a farmer makes. The term usher combines many forms of tax, including Zakat, the Muslim tradition of alms-giving.

In 2016, village headmen have been asked if farmers pay usher for licit crop cultivation. Paying usher is a wide-spread phenomenon. Overall, 82 per cent of village headmen reported that villagers pay this form of tax, the highest percentage was found in the Southern region with 92 per cent, the lowest in the Central region with 68 per cent. No information was available on the recipients of this tax.

[80] PPP conversion factor for private consumption was equal to 19.991 AFN per international dollar in 2015. World Bank. World Development Indicators.
[81] For a detailed discussion of measuring poverty in Afghanistan see: Central Statistical organisation (CSO) and The World Bank; *"Setting the official poverty line for Afghanistan"*; and Central Statistical organisation (CSO) *"Afghanistan living conditions survey 2014-15"*.

**Table 11: Percentage of farmers reporting to pay usher on licit crops, 2016**

| Region | Percentage of village headmen reported usher |
|---|---|
| **Central** | 68% |
| **Eastern** | 85% |
| **North-eastern** | 83% |
| **Northern** | 82% |
| **Southern** | 92% |
| **Western** | 82% |
| **National** | 82% |

### 4.2.6 Per-hectare income from opium and wheat

The financial benefits of illicit crops are an important aspect of household decision making. Per-hectare income from opium in the past six years has ranged from US$ 3,100 (2015) to US$ 10,700 (2011). Per-hectare income from opium (gross) increased by 45 per cent to US$ 4,500 in 2016 from US$ 3,100 in 2015.

Net income per hectare opium is derived by subtracting production costs from gross income. Production costs per hectare, reported by farmers, amounted to US$ 930 in 2015.[82] Variations in net income are mainly caused by variations in gross income, which are heavily driven by per-kilogram prices of dry opium and yields.

Some caveats should be added. Average production costs for opium do not necessarily apply to small-scale farmers who typically cultivate 1 jerib (= 0.2 hectares) or less in Afghanistan. They can make use of the "free" labour of their household members for ploughing and weeding the fields as well as for lancing and collecting opium. In some provinces, notably those with a strong insurgent presence, some or all farmers reported paying an opium tax, which further reduces their net income. This was not considered in this calculation of net income as it does not apply to all poppy farmers. The expenditure for opium poppy cultivation may also be higher if farmers rely exclusively on pump irrigation.

As comparison, gross per-hectare income from wheat was estimated to be US$ 720 in 2016. The estimated per-hectare income from wheat was based on yield information provided by the Ministry of Agriculture, Irrigation and Livestock[83] (1.98 tonnes per hectare) and on wheat price information from the MCN drug price monitoring reports (average US$ 0.37 per kilogramme between April and December 2016).

In contrast to previous years, where estimated yield on irrigated land from the MCN/UNODC village survey was used for calculating per-hectare income from wheat, this year's figures include yields on rain-fed land, too. Yields on rain-fed land are significantly lower than yields on irrigated land, which means that income from wheat in 2016 is not directly comparable to income from wheat in 2015.

[82] For 2016, no data was available, data of 2015 is used as proxy.
[83] http://www.fao.org/giews/countrybrief/country.jsp?code=AFG

**Table 12: Gross and net income per hectare of opium poppy, 2011-2016** (US dollars per hectare)

| | 2011 (US$/ha) | 2012 (US$/ha) | 2013 (US$/ha) | 2014 (US$/ha) | 2015 (US$/ha) | 2016 (US$/ha) |
|---|---|---|---|---|---|---|
| **Gross income per hectare of opium** | 10,700 | 4,600 | 4,500 | 3,800 | 3,100 | 4,500 |
| **Net income per hectare** | 9,300 | 3,300 | 3,600 | 2,900 | 2,170 | 3,570 |
| **Production costs (rounded)** | 1,390 | 1,300 | 900 | 860 | 930 | 930* |

**Note: production costs of 2015 are used as proxy for 2016. These calculations represent an average value per hectare under opium poppy cultivation. Farmers whose fields were affected by diseases, lack of water or adverse weather conditions may have made very little income, perhaps not even recovering production costs, while others whose fields were unaffected would have made a good profit.*

**Table 13: Average expenditure on opium poppy and wheat cultivation, per hectare, 2015** (US dollars per hectare)

| Costs per hectare | Fertilizer | Harvesting Lancing | Irrigation | Ploughing | Seeds | Weeding | Total costs |
|---|---|---|---|---|---|---|---|
| **Wheat (US$/ha)** | 128 | 197 | 95 | 72 | 63 | 55 | 456 |
| **Poppy (US$/ha)** | 111 | 489 | 201 | 71 | 27 | 68 | 931 |

*Note: Average over all expenditures named by farmers for each category. Zero expenditure is excluded for the estimates by category. Total cost is the average of the total expenditure reported by farmers. Data has not been updated in 2016.*

**Table 14: Average expenditure on opium poppy, per hectare and region, 2015** (US dollars per hectare)

| | Fertilizer | Harvesting/ Lancing | Irrigation | Ploughing | Seeds | Weeding | Total costs |
|---|---|---|---|---|---|---|---|
| **Eastern** | 199 | 353 | 90 | 69 | 20 | 146 | 788 |
| **Northern** | 217 | 348 | 28 | 84 | 13 | 111 | 671 |
| **Southern** | 80 | 572 | 256 | 74 | 29 | 56 | 1056 |
| **Western** | 155 | 339 | 90 | 60 | 22 | 68 | 676 |
| **All regions** | **111** | **489** | **201** | **71** | **27** | **68** | **931** |

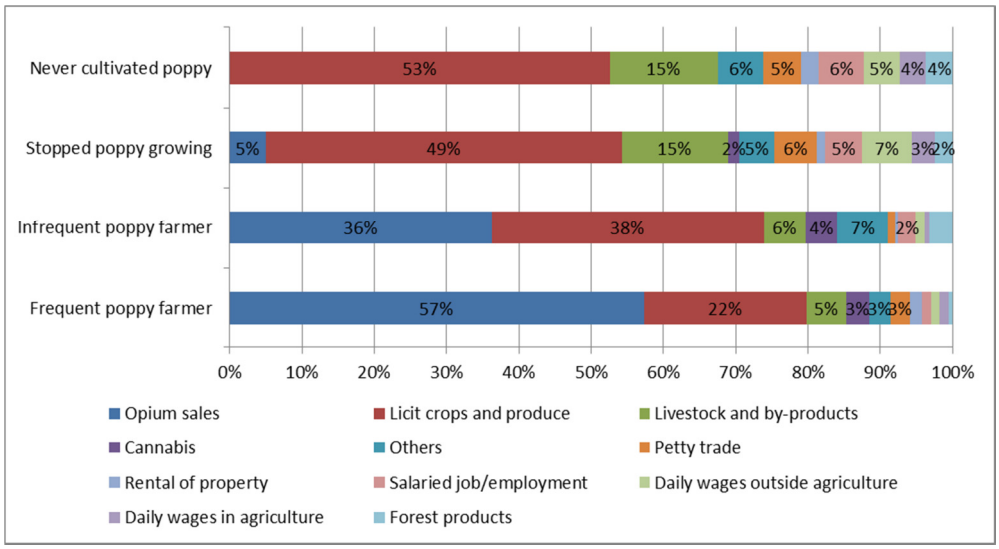
*Note: Average over all expenditures named by farmers for each category. Zero expenditure is excluded for the estimates by category. Total cost is the average of the total expenditure reported by farmers. Data has not been updated in 2016. The North-eastern and Central regions were excluded from the analysis, because of a very small number of available samples.*

### 4.2.7 The income from opium poppy in overall household income

The livelihood strategies of farmers in Afghanistan are complex and involve multiple income-generating activities performed through the year. For opium-poppy growers in 2016, the sales of opium poppy and derivatives constituted their main source of income in the year before the survey. On average, it accounted for 57 per cent of the annual income of frequent poppy farmers and 36 per cent of infrequent poppy farmers. Other important sources of income for opium-poppy growers were the sales of licit crops and agricultural produce (38 per cent and 22 per cent respectively), and livestock and by-products (6 per cent and 5 per cent, respectively).

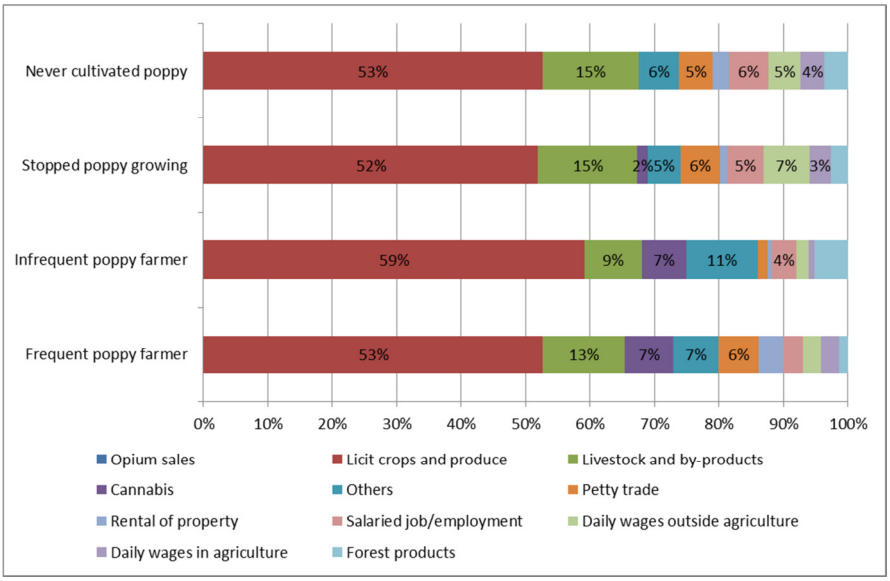
For farmers who stopped opium-poppy growing in 2016 or before and farmers who had never grown opium poppy, the major source of income was sale of licit crops and agricultural produce, which represented 49 per cent and 53 per cent of their total income, respectively; followed by livestock and by-products, which made up 15 per cent of total income in both cases.

**Figure 34: Percentage from total annual income per income-generating activity by type of farmer in Afghanistan, 2015** (reported in 2016)




If opium-poppy income were excluded, the livelihood strategy of opium-poppy growers resembled the livelihood strategies of other farmers. An exception was the income derived from livestock whose contribution to total income was larger for farmers who stopped opium-poppy growing and farmers who had never grown opium poppy (15 per cent of the total income, for both) than in the case of opium-poppy growers (9 per cent and 13 per cent, respectively) .

**Figure 35: Percentage from total annual income per income-generating activity, excluding sales of opium poppy and derivatives, by type of farmer in Afghanistan, 2015** (reported in 2016)

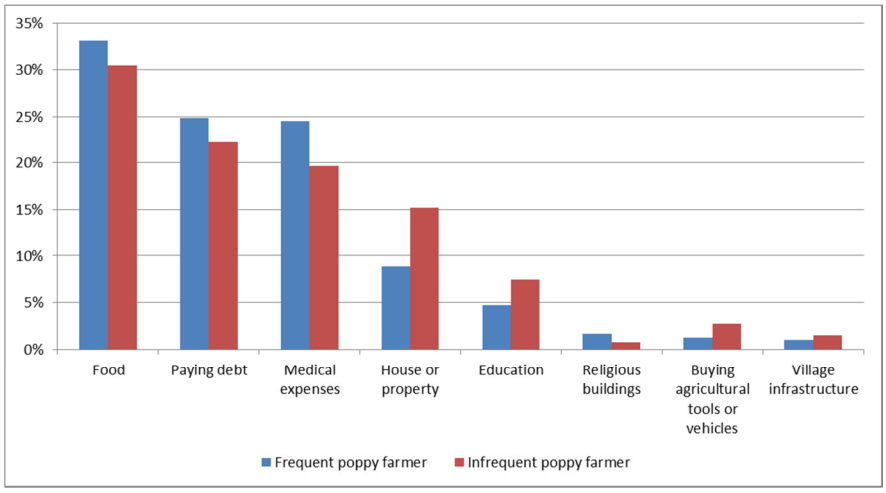



### 4.2.8 Use of opium income

Opium poppy farmers were asked on how their household spent the income from opium poppy was spent. The most common use by both types of farmers was food, followed by paying debt and medical expenses.

Those farmers, who cultivate opium only infrequently, invest more often in activities that have potential in building alternatives to opium poppy cultivation. These farmers mentioned almost twice as often to buy land or property and a third more often to invest the money earned from opium poppy in education or agricultural tools or vehicles.

**Figure 36: Use of income from opium poppy reported by opium poppy farmers, 2016**




*Note: Farmers were asked for the three main uses of their income from opium poppy. Data reflects all mentions of a use, regardless of its rank.*

### 4.2.9 Replacement strategies of farmers who stopped cultivating opium poppy

The most common strategy for replacing opium-poppy related income of farmers who stopped cultivating opium poppy in or before 2016 was to engage in livestock related activities, followed by income from daily wages and cultivation of alternative crops.

**Table 15: Strategies for replacing income from opium poppy by farmers who stopped cultivating (per cent), 2016**

| Strategy | Per cent of farmers |
|---|---|
| **Livestock raising** | 26% |
| **Daily wages** | 19% |
| **Cultivation of land with other crops** | 14% |
| **Petty trade** | 13% |
| **Rely on remittance** | 11% |
| **Rental of land, cars or agricultural tools** | 8% |
| **Other** | 6% |
| **External or government assistance** | 3% |

### 4.2.10 Advance payments for opium poppy cultivation

One element which makes opium poppy cultivation attractive is the practice of advance opium-poppy payments. About 37 per-cent of headmen from opium-poppy villages reported that farmers in their villages received advanced payments for opium-poppy cultivation in 2016. In 2015, only 11 per cent of farmers reported that villagers had access to advance payments.

**Table 16: Percentage of village headmen in opium poppy villages reporting that farmers had access to advance payments for opium poppy cultivation, by region, 2016**

| Region | Advance money for opium poppy cultivation |
|---|---|
| **Eastern** | 33% |
| **Northern** | 43% |
| **Southern** | 50% |
| **Western** | 25% |
| **National** | 37% |

*Note: Because of a very small number of samples, the Central and North-eastern regions have been excluded from the regional analysis, but are considered in the national average.*

### 4.2.11 Self-reported reasons for cultivating opium poppy, for stopping and for never engaging in opium poppy cultivation

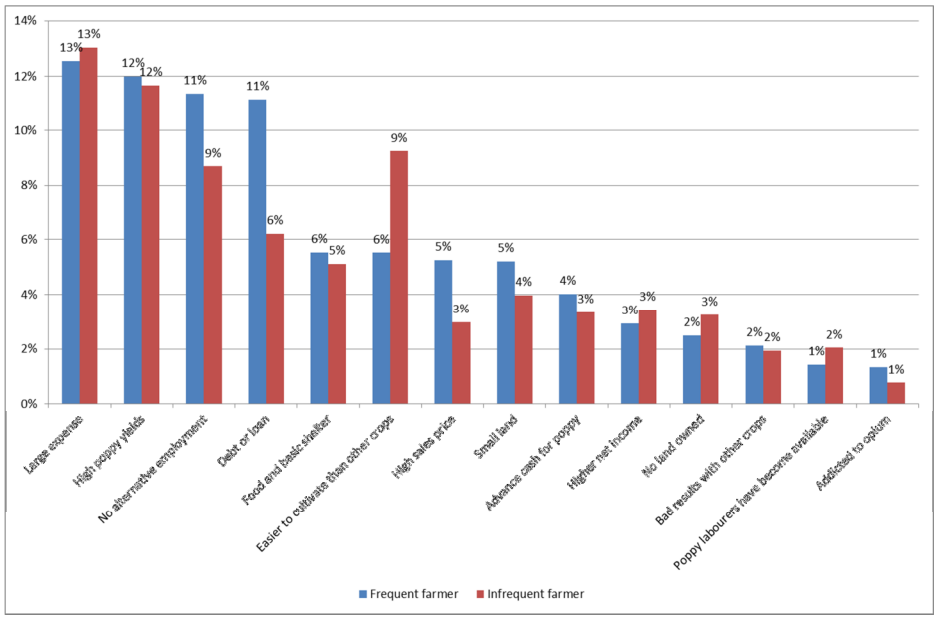
Given a number of reasons to choose from, Afghanistan's opium poppy farmers named a singular large expense, such as a wedding, most often as one of three reasons for cultivating opium poppy in 2016. This was followed by high poppy yields, lack of alternative, non-opium-poppy employment and debts or loans.

The most striking differences between frequent and infrequent poppy farmers could be found in being motivated by debt or loans and by convenience of growing. Eleven per cent of frequent poppy farmers named debt or loan among the top three reasons for cultivating opium poppy, while only 6 per cent of infrequent farmers did so. That poppy is easier to cultivate than other crops was named more often (9 per cent) among infrequent farmers, while 6 per cent of frequent farmers did so.

The far most common reason named for stopping opium poppy cultivation was that opium poppy cultivation is against Islam (17 per cent), followed by fear of addiction (10 per cent), good yields from other crops (9 per cent) and fear of eradication (9 per cent).

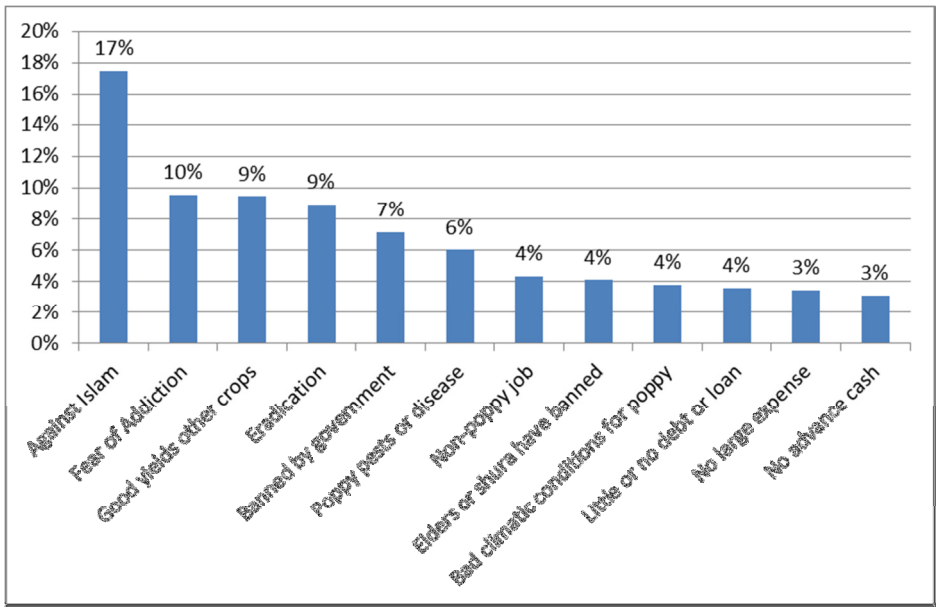
A similar picture is found among farmers who have never cultivated opium poppy. The most common reason named among the top three reasons for never cultivating opium poppy was that it was against Islam (26 per cent), followed by fear of addiction (14 per cent) and bans by the government (11 per cent) or elders/Shura (7 per cent).

**Figure 37: Reasons for cultivating opium poppy among farmers in Afghanistan** (percentage) **by frequency of cultivation, 2016**



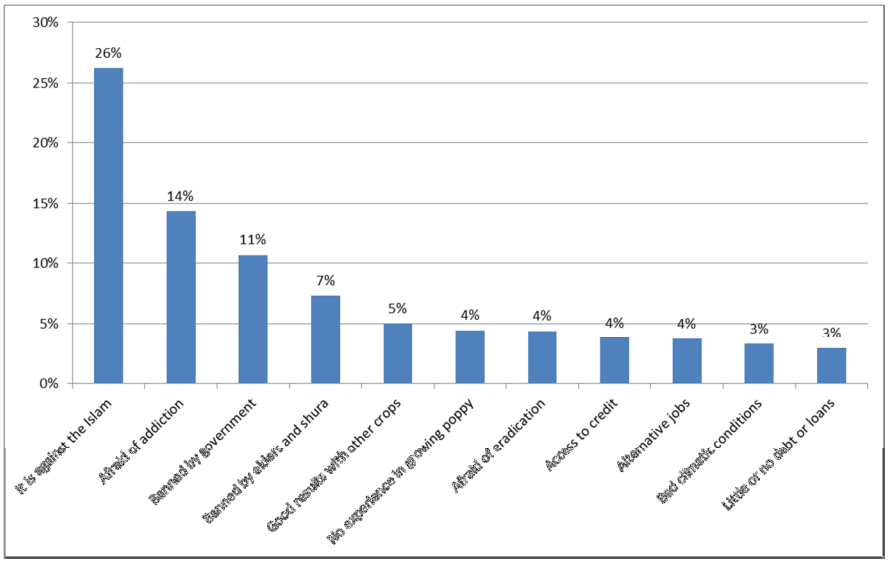

*Note: Farmers were asked for naming the three most important reasons for cultivating opium poppy.*

**Figure 38: Reasons for stopping opium poppy cultivation, 2016**




*Note: Farmers were asked for naming the three most important reasons for stopping opium poppy cultivation in or before 2016.*

**Figure 39: Reasons for never cultivating opium poppy, 2016**



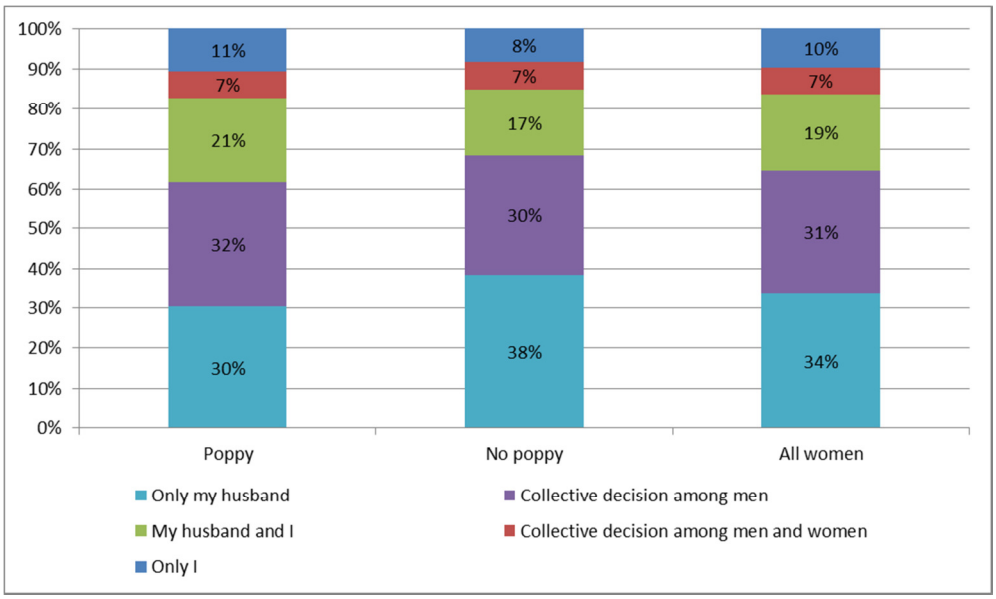

*Note: Farmers were asked for naming the three most important reasons for never cultivating opium poppy in or before 2016.*

## 4.3 Gender equality and opium poppy cultivation

### 4.3.1 The role of women in the decision to cultivate opium poppy

When comparing decision making processes in households with and without opium poppy cultivation, more similarities than differences could be found. In about two-thirds of all households, women reported that either their husband or a collective of all men in the household decided whether opium poppy was cultivated in a year or not. In 17 to 21 per cent of households, women reported to take the decision together with their husband, in 7 per cent it was a collective decision among all men and women, and in 8 to 10 per cent of all households the woman was the sole decision maker (most of these women were either widowed or divorced).

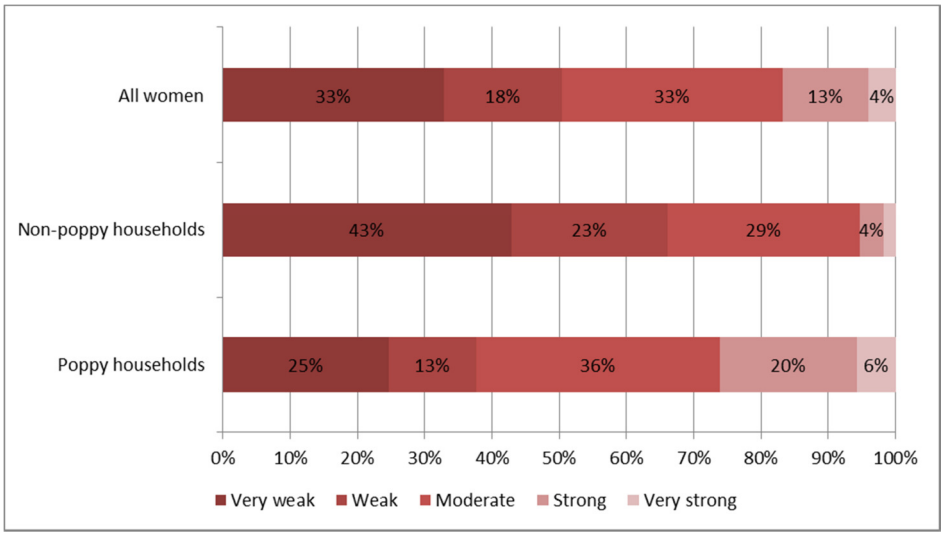
**Figure 40: Women's assessment on who took the final decision on opium poppy cultivation in the household**




However, when asked about their influence on the decision to cultivate opium poppy in a year, women in opium poppy cultivating households assessed an on average higher level of influence.

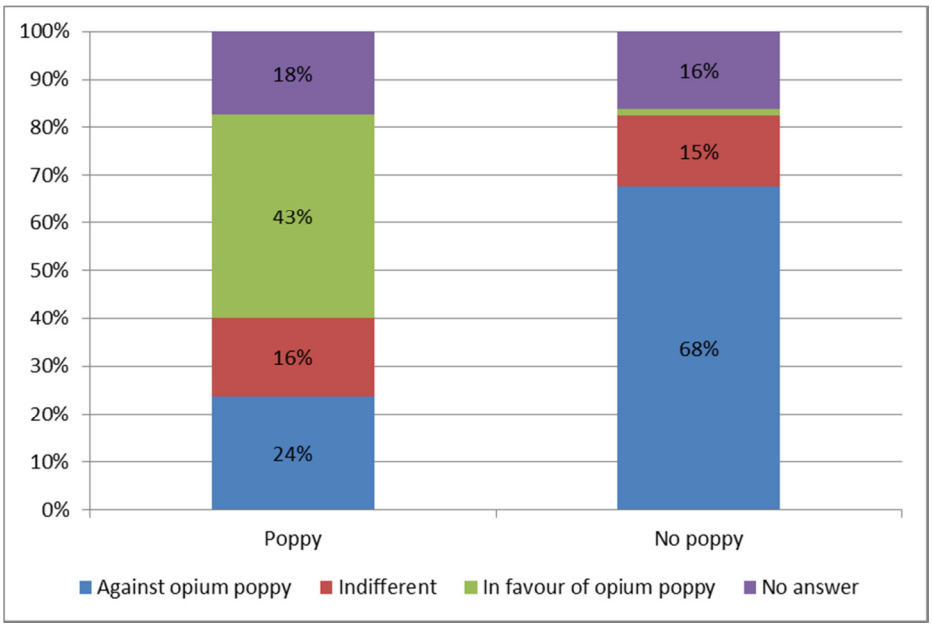
Twenty-six per cent of women assessed to have a strong or very strong influence in opium poppy households, while only 7 per cent of women in non-opium-poppy households said the same.

**Figure 41: Woman's assessment on their influence on the final decision on opium poppy cultivation in the household, by opium poppy cultivation status**




Women's attitudes towards opium poppy cultivation reflect the decision of the household. In opium poppy cultivating households the majority of women (59 per cent) are indifferent or in favour opium poppy cultivation; in non-opium-poppy households it was 83 per cent opposed opium poppy cultivation. A significant share of 16 per cent of women in opium poppy cultivating households stated to oppose cultivation.

**Figure 42: Woman's attitude towards opium poppy cultivation 2016, by opium poppy cultivation status**

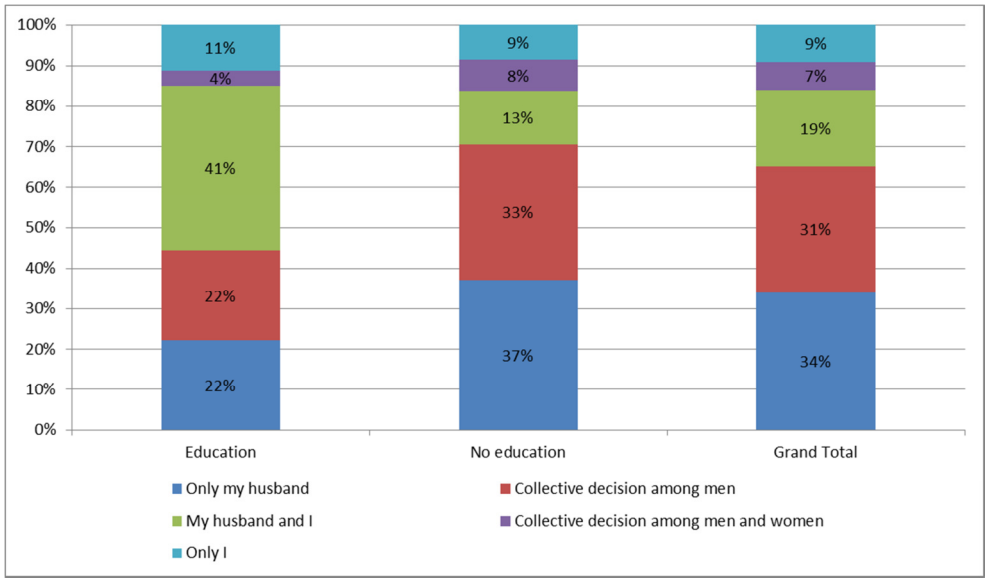



### 4.3.2 Influence of women's education in the decision to cultivate opium poppy

Education has been found to be key to improve the influence of women on the decision making of a household to engage in opium poppy cultivation. About six in ten women with some level education reported that they were able to directly participate in taking the final decision on opium poppy cultivation, while only three in ten women without education assessed the same. Similar

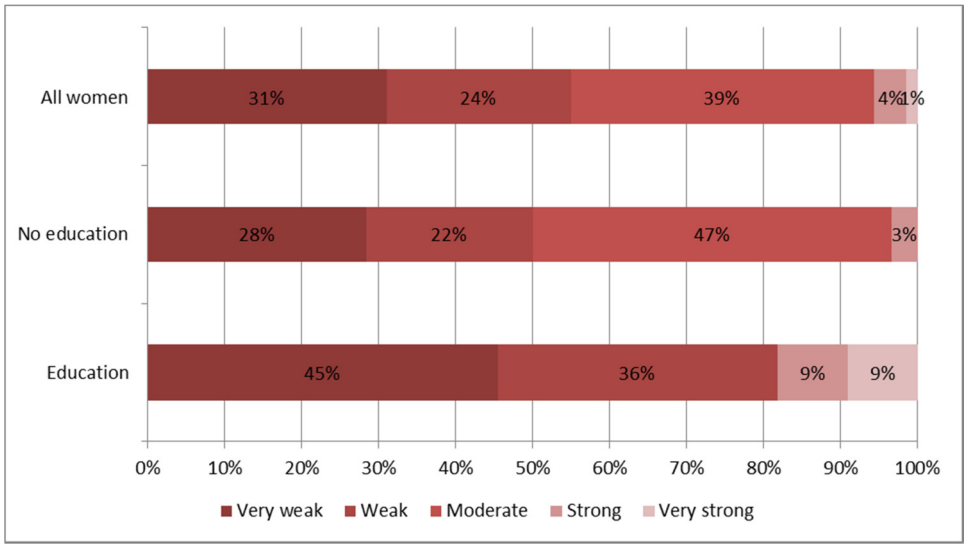
shares could be found when restricting the comparison to households engaging in opium poppy cultivation.

**Figure 43: Woman's perception on who has the final decision on opium poppy cultivation, by educational status**




Even if they did not participate in the final decision on opium poppy cultivation, women with at least one year of education were more influential in that decision. Eighteen per cent of women with education felt that they strongly or very strongly influenced that decision, while only about 3 per cent of non-educated women assessed the same. Similar findings could be found when restricting the comparison to opium poppy cultivating households.

**Figure 44: Woman's perceived influence on opium poppy cultivation decisions inside the household, by educational status**




### 4.3.1 Influence of women on spending the income from opium poppy

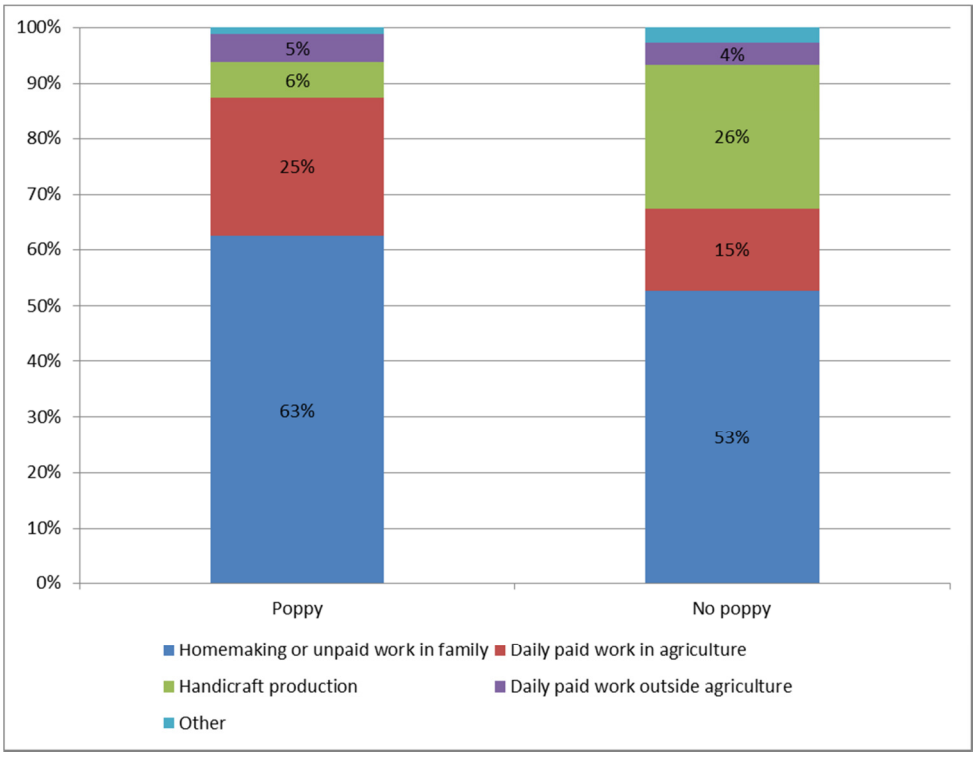
Women's participation on the decision on the use of opium poppy income also varied depending on their educational status, although to a lesser extent. Forty-six per cent of women with at least one year of education reported to partake in that decision, while only 39 per cent of women without education reported the same. More importantly among those women who did not directly partake in the decision, about one in four women with education reported to have a strong or very strong influence, but only about 2 per cent women without education felt the same.

### 4.3.2 Influence of women's access to economic activities on opium poppy cultivation decisions

The availability of profitable economic activities for both male and female household members – or the lack thereof – can influence decisions around the cultivation of opium poppy. This was reflected in the results of this survey, as well. About half of the women in non-opium poppy households were able to perform remunerated jobs (47 per cent); in contrast, a little more than a third of women in opium poppy households were able to do the same (37 per cent). Notably, most of the working women in non-opium poppy households were earning income by producing handicrafts, while most of the working women in opium-poppy households were daily paid agricultural workers.

The available data did not allow for assessing the influence the type of work had on the decision to cultivate opium poppy. To do so, more data would be needed on the income earned from each activity and on other factors, such as reliability of income (producing handicrafts might be less prone to seasonality and shocks like bad harvests and thus a more reliable source of income than daily paid agricultural work).

**Figure 45: Main economic activity of women in opium poppy and non-opium-poppy households**



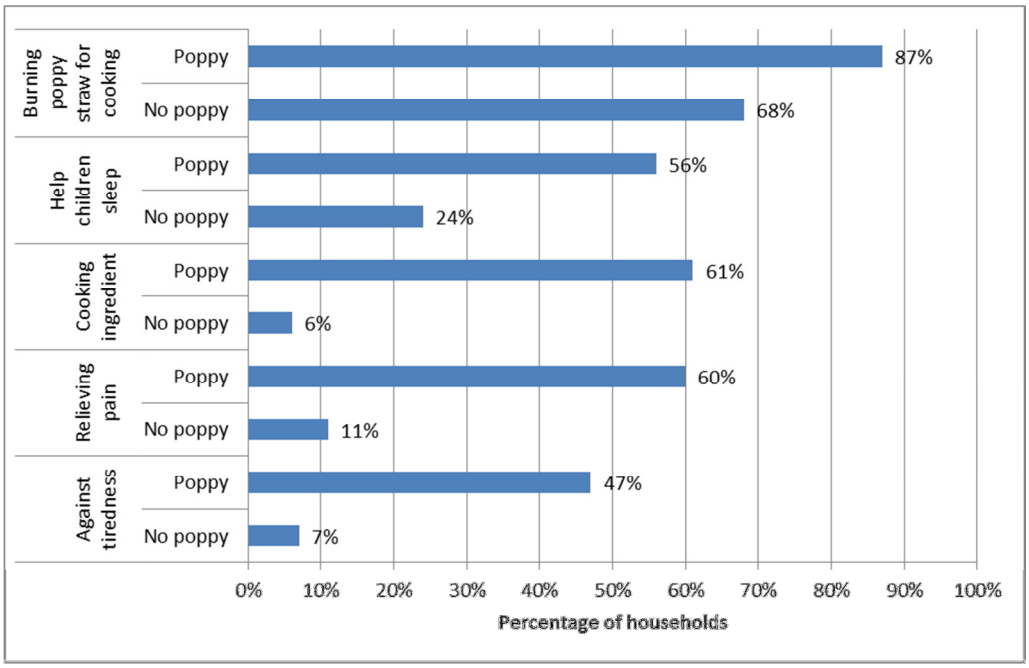

### 4.3.3 Women's awareness about the illegality of opium poppy cultivation

Women awareness about the illegality of opium poppy cultivation showed some link with the propensity of households to cultivate opium poppy. About one in ten women in opium poppy households mentioned that opium poppy cultivation was not banned by the government, while almost none of the women from non-opium poppy households indicated the same. Interestingly, this result was location specific as most of the responses from women indicating that opium poppy cultivation was allowed by the government were from the Western region of Afghanistan.

### 4.3.4 Other uses of opium poppy in all its forms

Both women in opium poppy households and in non-opium households used opium poppy in their daily lives, with women in opium poppy households using opium poppy more intensively. The main use of opium poppy was to burn straw for cooking (nine in ten women in opium poppy households and two thirds of women in non-opium poppy households). In addition, about half of the women in opium poppy households used opium poppy for other daily life activities, including making children to fall asleep, as an ingredient in cuisine, for relieving pain, and against tiredness. In contrast, less than a quarter of women in non-opium poppy households used opium poppy for the daily life activities indicated above.

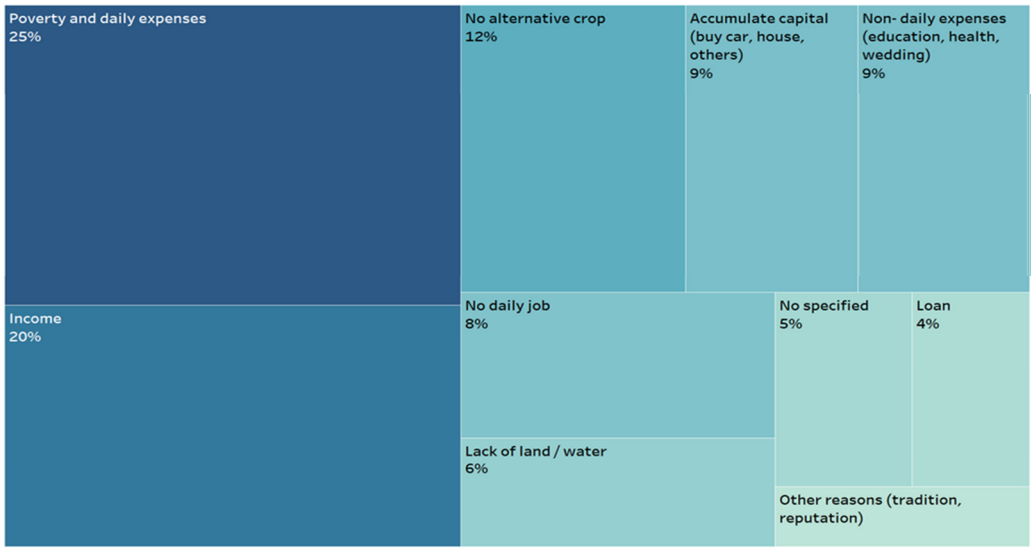
**Figure 46: Percentage of women reporting a certain use of opium poppy inside the household, by opium-poppy/non-opium-poppy households**




### 4.3.5 Reasons for opium poppy cultivation

Women statements on the reasons for opium poppy cultivation mostly corroborated previous findings from men statements. A quarter of the women named poverty as major motivation, followed by earning higher income (regardless of the household poverty status, 20 per cent of respondents). Almost twenty per cent of women specified that opium poppy allowed households to accumulate capital (purchasing a car, house, or other physical assets) or to cover large basic and non-basic expenses such as education, health fees, and weddings. Another twenty per cent of women indicated that constraints in finding a daily job or the lack of profitable, alternative crops also played a role in opium poppy cultivation decisions. Finally, other minor reasons included lack of land or water (6 per cent), loan re-payments (4 per cent), as well as tradition and reputation (2 per cent).

**Figure 47: Women's stated reasons for opium poppy cultivation by members inside the household**




## 4.4 Data related to infrastructure and services

### 4.4.1 Health care facilities

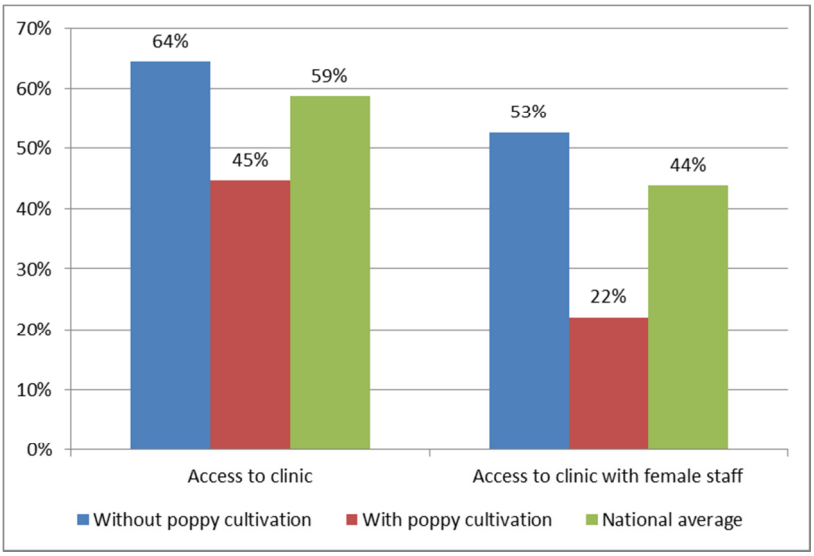
Access to health services is a multi-dimensional concept. It not only relates to the physical distance to health facilities or the travel time involved, but also involves the costs of travel and services, as well as opportunity costs, cultural responsiveness to clients' needs, mobility of women, and even the 'value' attached to the health and survival of specific household members, such as children and women (the demand-side barriers to access health services). A detailed discussion on accessibility of health services and care seeking behaviour can be found in ALCS 2014. [84]

The MCN/UNODC village survey asked the village headmen about access[85] of the villagers to a health care centre or medical clinic, the walking distance and as well as if female staff was present at the clinic.

Overall, 59 per cent of village headmen reported that the villagers have access to a health care centre or medical clinic. When comparing villages with and without opium poppy cultivation, it becomes apparent that poppy villages have significantly less access: only 45 per cent of opium poppy villages had reported access to health care centres and only 22 per cent to health care centres with female staff, while among villages without opium poppy cultivation the shares were 64 per cent and 53 per cent, respectively.

[84] Afghanistan Living Conditions Survey 2014-2015, Central Statistical Organization
[85] The notion of access may differ from headmen to headmen and the ability of the respondents to identify the type of health care provider and the staff available could not be assessed.

**Figure 48: Access to health care facilities, by opium poppy cultivation status, 2016**




The regional distribution revealed that in particular the Western and Eastern regions have under-average access to clinics.

**Table 17: Percentage of villages with access to health services and health services with female staff, by region, 2016**

| | Access to clinic | Access to clinic with female staff |
|---|---|---|
| **Central** | 79% | 65% |
| **Eastern** | 48% | 35% |
| **North-eastern** | 62% | 55% |
| **Northern** | 51% | 40% |
| **Southern** | 59% | 39% |
| **Western** | 39% | 23% |
| **National** | 59% | 44% |

Village headmen were asked as well about the distance to the health care centre in walking minutes. Walking time averaged at 52 minutes for poppy cultivating villages and 54 minutes for villages without opium poppy cultivation, which cannot be considered as statistically significant.

### 4.4.2 Access to schools

SDG 4 aims at ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all. Education is fundamental for development and growth, and also plays a key role in overcoming intergenerational poverty traps.[86] Lack of quality education has long term consequences for building human capital and the broader development agenda, in terms of employment, economic growth, and rural development.

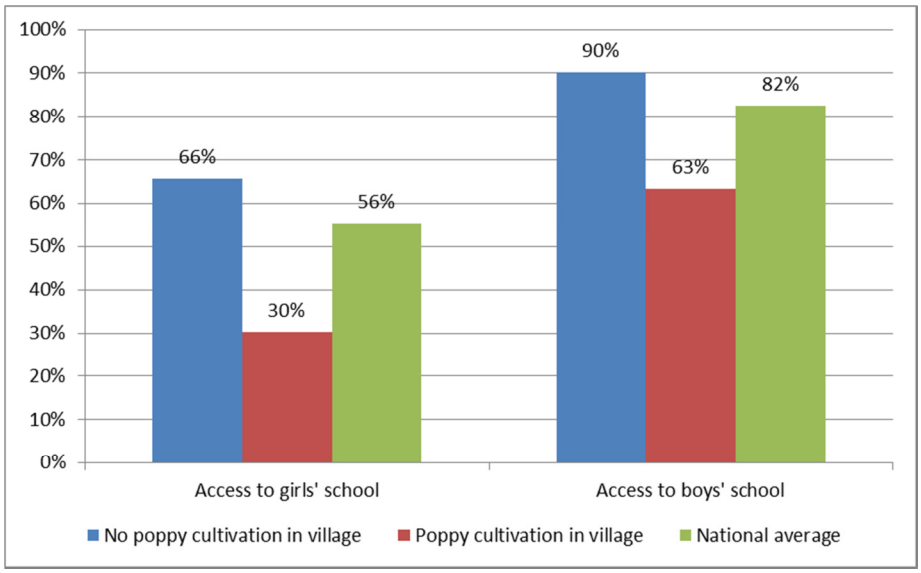
As in previous years, the MCN/UNODC village survey asked village headmen whether villagers have access to a boy or a girl school. At national level, 82 per cent of village headmen reported that villagers had access to a boy school and 56 per cent reported access to a school for girls.

There is a striking relationship between the absence of girls' and boys' schools and the presence of opium poppy cultivation. In 66 per cent of poppy-free villages, headmen reported that there was a girl school; however the same was reported for only 30 per cent of all villages where opium poppy cultivation was present. For boys' school, the difference was smaller, but still significant: 90 per

[86] Poverty trap is a self-reinforcing mechanism that makes it difficult to escape poverty and forces people to remain poor.

cent of all villages without opium poppy cultivation had access to a boy school, but only 63 per cent of all villages affected by opium poppy cultivation.

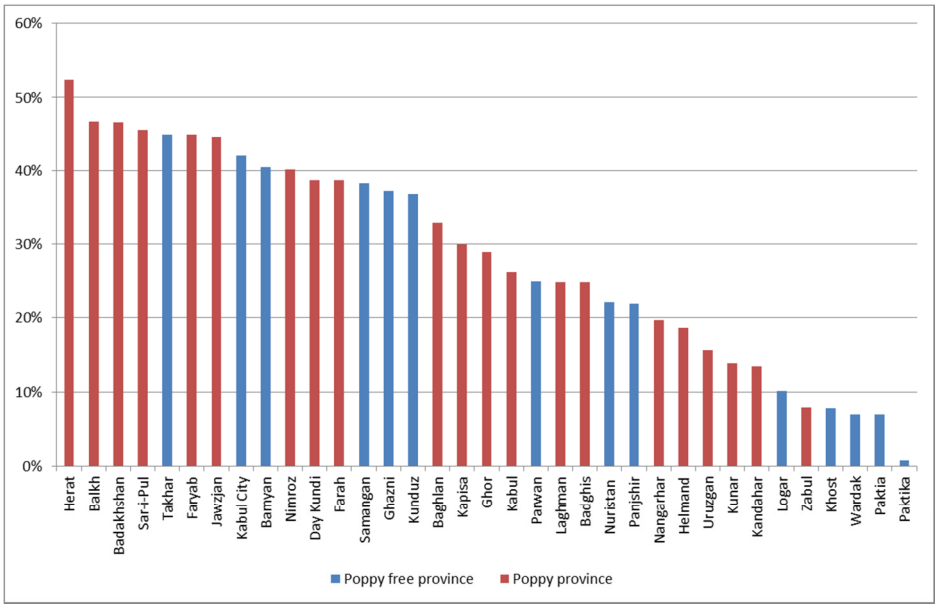
**Figure 49: Access to boys' and girls' school by opium poppy cultivation status, 2016**




A look at the geographical distribution of schools shows the lack of schools (both for boys and girls) in particular in the insecure regions in the South, where most of opium poppy cultivation took place. A notable lack of girl's schools can be found as well in the mostly poppy-free Central region. In Badakhshan, on the other hand, where significant levels of opium poppy cultivation can be found and where most of the villages are under government control, schooling seems to be available for both genders.

It is thus safe to say that opium poppy cultivation predominantly takes place in areas with limited access to basic education opportunities for boys and even more limited access for girls. The absence of schools is as well strongly related to the absence of government control and security.

**Figure 50: Share of girls among 12th grade general education graduates, 2015/2016, by opium poppy cultivation status**




*Source: Ministry of Education, Afghanistan*

### 4.4.3 Access to electricity

Access to reliable electricity from the grid is important to human development as electricity is, in practice, indispensable for certain basic activities, such as lighting, refrigeration and the running of household appliances, and cannot easily be replaced by other forms of energy.[87]

In the 2016 MCN/UNODC village survey, headmen of 9 per cent of all villages have reported to have access to public electricity (from the grid). Variations were strong between regions and between poppy and non-opium-poppy villages. Out of all poppy villages, 3 per cent reported to have access to public electricity, whereas 12 per cent of all non-opium-poppy villages reported to have access. Overall, it seems that access to the public grid is best close to provincial centres (see map).

An analysis at regional level showed that highest levels of access were present in the Northern (17 per cent) and North-Eastern regions (24 per cent), followed by the Central region (10 per cent); lowest levels in the main opium poppy cultivating regions in the South (2 per cent), West (6 per cent) and Eastern regions (6 per cent).

Renewable energy sources, such as solar panels, can be a viable solution for providing electricity to rural communities in Afghanistan. A very large proportion of headmen reported already to use solar panels as source for electricity for lighting and a recent report[88] documented the use of solar energy as well for powering irrigation pumps in agriculture. Progress in that direction needs to be further monitored.

**Figure 51: Access to public electricity by opium poppy cultivation status, 2016**

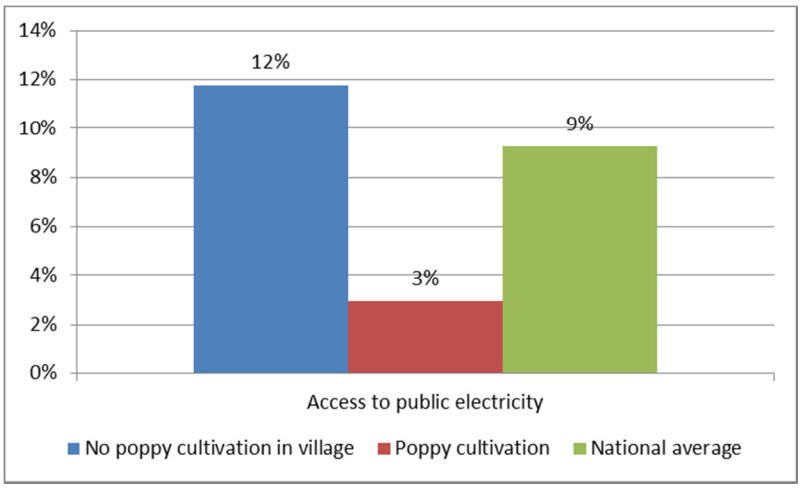
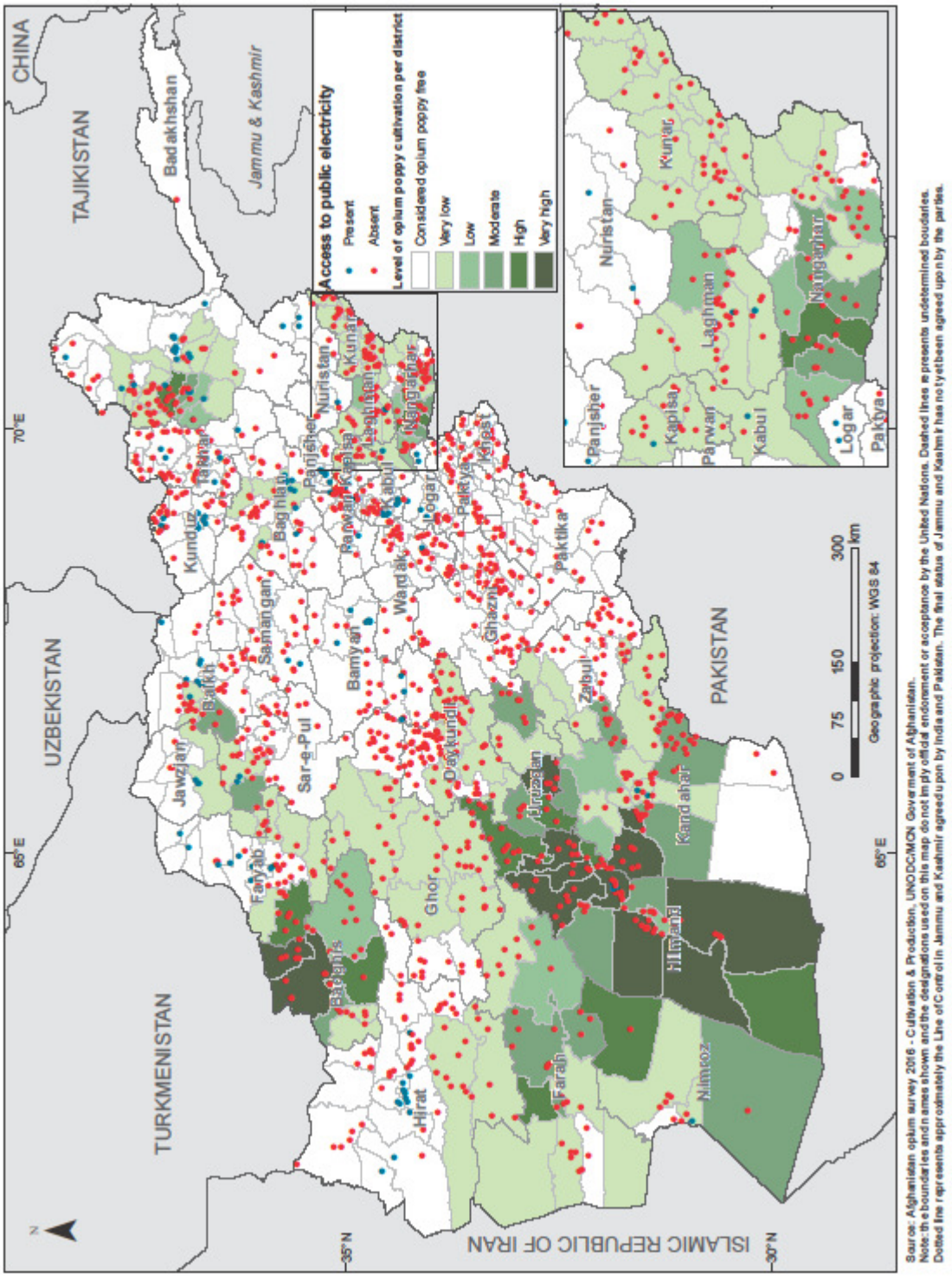



**Table 18: Percentage of villages with access to public electricity, by region, 2016**

| | Access to public electricity according to village headmen |
|---|---|
| **Central** | 10% |
| **Eastern** | 6% |
| **North-eastern** | 24% |
| **Northern** | 17% |
| **Southern** | 2% |
| **Western** | 6% |
| **National** | 9% |

[87] World Bank, World Development Indicators.
[88] David Mansfield, Paul Fishstein and OSDR, 2016. "Time to Move on: Developing an Informed Development Response to Opium Poppy Cultivation in Afghanistan"

**Map 7:** **Access to public electricity, 2016**



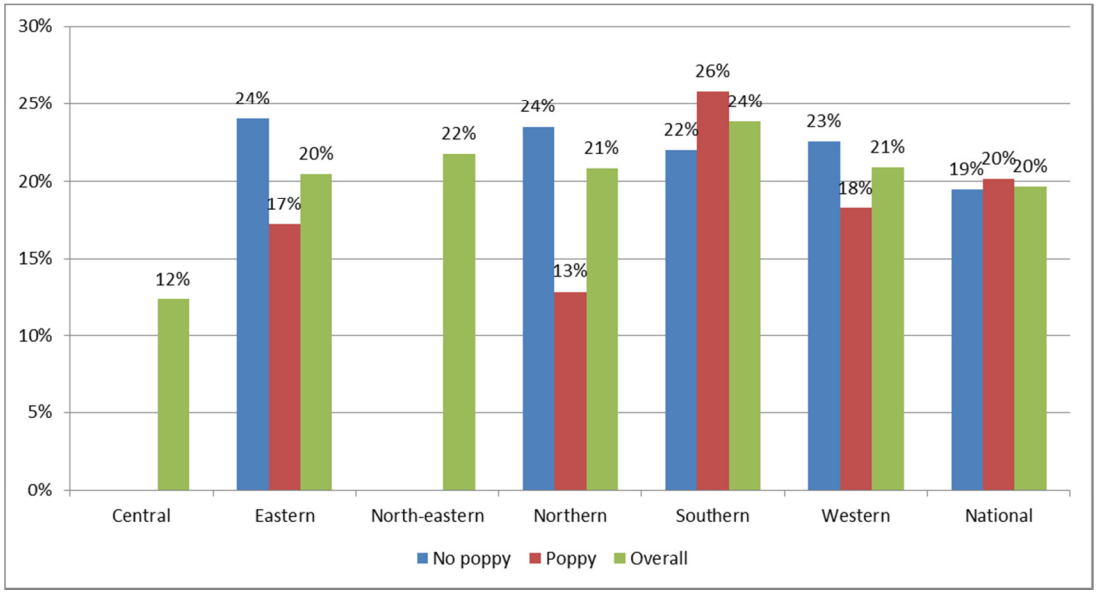

Source: Afghanistan opium survey 2016 - Cultivation & Production, UNODC/MCN Government of Afghanistan.
Note: the boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Dashed lines represents undetermined boundaries.
Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

### 4.4.4 Access to markets

Good access to physical and economic markets is imperative for obtaining sufficient household income. Rural populations worldwide have indicated that one of the reasons they cannot improve their standards of living is that they face difficulties in accessing markets. This restricts farmers' opportunities for income generation, as large distances increase uncertainty and transportation costs, and this means limited sales opportunities, reduced farm-gate profits and increased farm costs. It also exacerbates the problem of post-harvest losses.[89]

In the past, there has been a clear relation between the presence of opium poppy cultivation and the absence of accessible, close markets. With the more wide-spread nature of opium poppy, this difference seemed to have become less important. In 2016, 20 per cent of all villages reported to have a local market, with similar shares among poppy and non-opium-poppy villages. At national level, there were no statistical significant differences in travel time to the market.

**Figure 52: Percentage of villages with a local market in the village, by region and opium poppy cultivation status, 2016**




*Note: Because of a very low number of samples, no comparison between poppy and non-opium-poppy villages is available for the Central and North-eastern regions.*

**Table 19: Travel time to the market in minutes according to village headmen, by region and opium poppy cultivation, 2016**

| | No Poppy | Poppy | Overall |
|---|---|---|---|
| **Eastern** | 67 | 75 | 71 |
| **Northern** | 87 | 89 | 87 |
| **Southern** | 72 | 63 | 68 |
| **Western** | 72 | 107 | 86 |
| **National** | 73 | 80 | 75 |

*Note: Travel time in minutes by using the most common means of transport.*

[89] IFAD (2003). *"Promoting market access for the rural poor."*

**Figure 53: Main means of transportation to the market, by region, 2016**

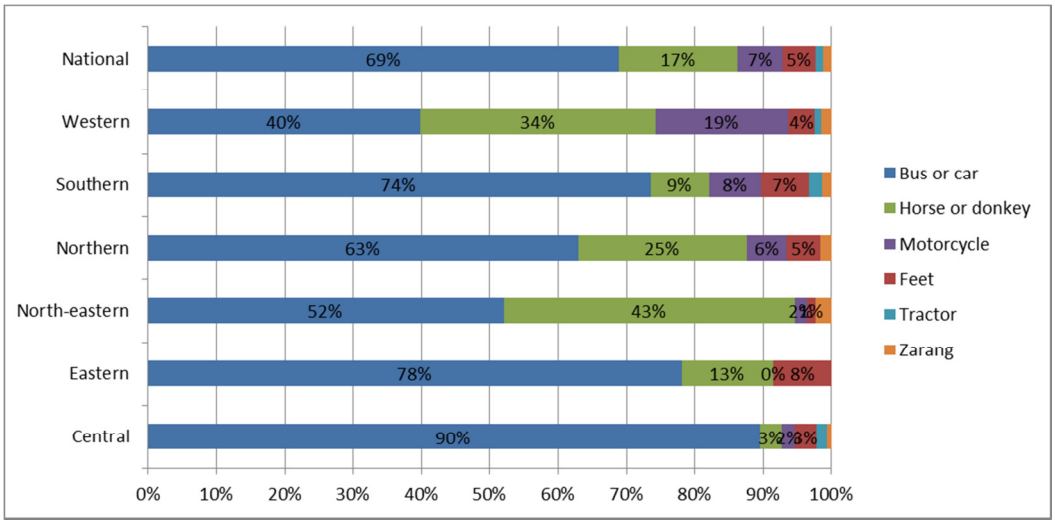
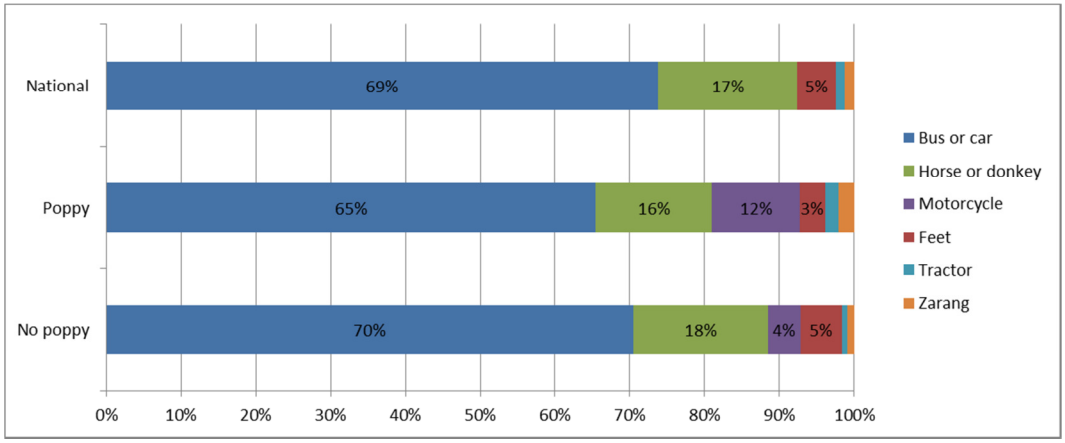



**Figure 54: Main means of transportation to the market, by opium poppy cultivation status, 2016**




### 4.4.5 Roads and public transportation

Access to reliable, all season roads are fundamental for economic development and human well-being in rural areas, as physical isolation hampers access to important infrastructure such as schools, health services or markets. Indicator 1.1. of SDG 9 measures the proportion of the rural population who live within 2 km of an all-season road.

In the past decade, the international community has spent billions on constructing and repairing Afghanistan's road infrastructure, including the completion of the ring road, several highways and countless smaller, yet important rural projects.[90]

In 2016, the MCN/UNODC village survey asked village headmen if villagers had access to roads, and if so what the main type of roads was. Overall, 93 per cent of all headmen reported that villagers had access to roads. With exception of the Eastern region, the estimated percentage of villages with access to roads was larger than 90 per cent. Among villages affected by opium poppy cultivation the percentage was slightly smaller, at 90 per cent, among villages without opium poppy cultivation 94 per cent of headmen reported that villagers had access to roads.

[90] See, e.g. http://www.worldbank.org/en/news/feature/2017/03/05/rural-access-project-connect-remote-village-essential-services-daykundi-province

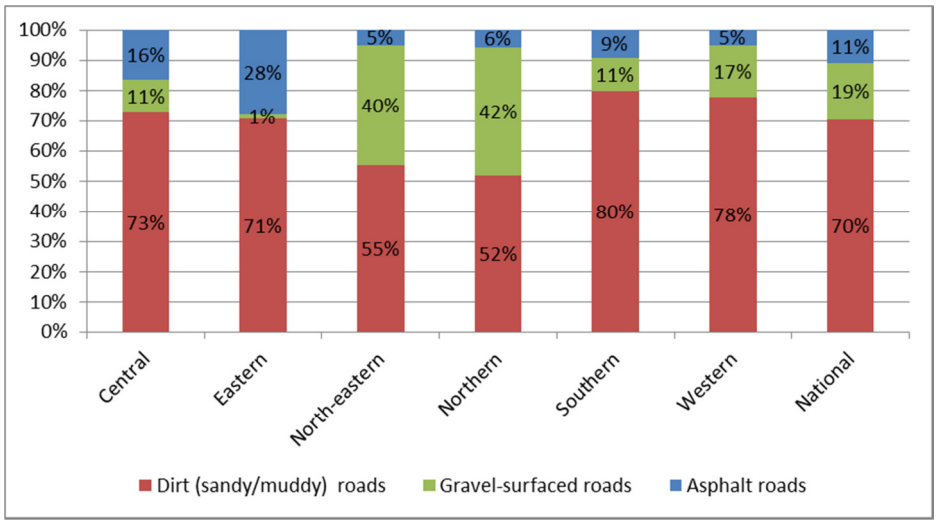
**Table 20: Percentage of villages with access to roads, according to village headmen, by region, 2016**

| | Without poppy | With opium poppy cultivation | Overall |
|---|---|---|---|
| **Central** | : | : | 99% |
| **Eastern** | 88% | 84% | 86% |
| **North-eastern** | : | : | 95% |
| **Northern** | 94% | 87% | 92% |
| **Southern** | 89% | 93% | 91% |
| **Western** | 94% | 89% | 92% |
| **National** | 94% | 90% | 93% |

*Note: Because of a very low number of samples, no comparison between poppy and non-opium-poppy villages is available for the Central and North-eastern regions.*

The type of roads available depends strongly on local geographical conditions. While in all provinces dirt roads are the main type of roads (more than 50 per cent of roads), gravel roads are very common in the North-eastern and Northern regions (40 per cent and 42 per cent, respectively).

**Figure 55: Main type of roads available to villagers, by region, 2016**




To get an understanding if some form of public transportation was available, village headmen were asked if a vehicle passed the village on which villagers can pay a fare for a ride. Overall, 93 per cent of all headmen answered with yes. No major differences between villages with or without opium poppy cultivation or between regions could be found. About two-thirds of headmen reported that these vehicles arrive once by day.

### 4.4.6 Farmers' associations and small scale industries

Farmer organizations facilitate more direct integration of farmers into value chains and increase their negotiation power. The UN Guiding Principles on Alternative Development encourage efforts allowing the promotion and enhancement of farmer associations in illicit crop communities, as the lack of or weak farmer associations has been identified as one of the potential drivers of illicit crop cultivation. Opium poppy villages had fewer formal farmers' organizations, such as co-operatives (5 per cent) than non-opium poppy villages (13 per cent) in 2016.

Small scale industries or manufacturing enterprises bring labour opportunities to rural areas and can counteract seasonal unemployment in agriculture. Opium poppy villages had slightly more small-scale industries (10 per cent) than non-opium poppy villages (8 per cent) in 2016.

**Table 21: Availability of farmer's associations and small scale industries in villages** (per cent)**, by opium poppy cultivation status, 2016**

| | Cooperatives or farmer's associations | Small manufacturing industry or similar |
|---|---|---|
| **Without opium poppy cultivation** | 13% | 8% |
| **With opium poppy cultivation** | 5% | 10% |
| **National** | 11% | 9% |

*Note: Both questions received a large number of non-response (>10 per cent), results have to be taken with caution.*

## 4.5 Governance and security

Peace, justice and effective, accountable and inclusive institutions are at the core of sustainable development.[91] SDG 16 promotes peaceful and inclusive societies for sustainable development, provision of access to justice for all and building effective, accountable and inclusive institutions at all levels.

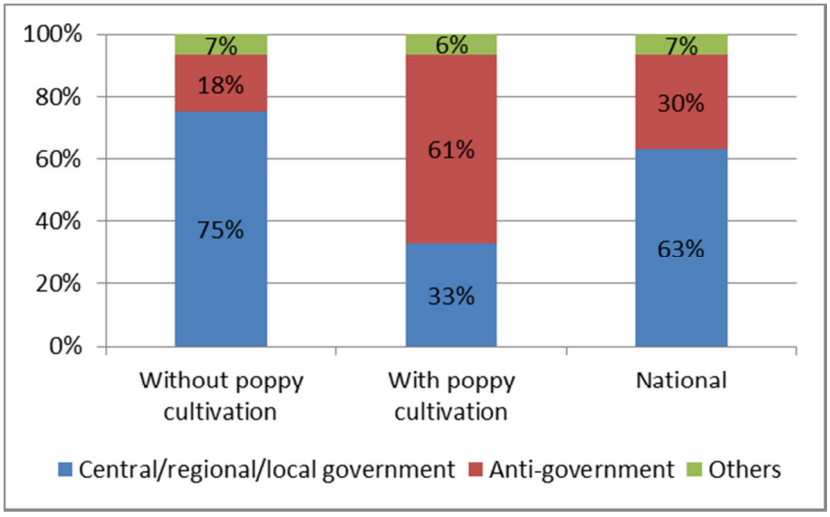
### 4.5.1 Security and presence of government in villages

In 2016, as in previous years, there was a clear link between government control, security and opium poppy cultivation.

In the MCN/UNODC village survey, village headmen were asked who was in control of the village.[92] Overall, 37 per cent of all headmen reported that the village was not under control of the government (30 per cent under control of insurgency and 7 per cent "Others"). Among those villages where opium poppy cultivation took place, the percentage was much higher: 67 per cent of all headmen reported that the village was outside of the control of the government. Among villages without opium poppy cultivation, 25 per cent of farmers reported that other authorities than the government were under control.

Opium poppy cultivation therefore takes place predominantly in areas without government control. However, there are two main exceptions: in the Central region, there are large areas without government control and without opium poppy cultivation. Likewise, in Badakhshan, there are significant levels of opium poppy cultivation in areas with government control.

**Figure 56: Government control of villages, by opium poppy cultivation status, 2016**




[91] https://sustainabledevelopment.un.org/sdg16

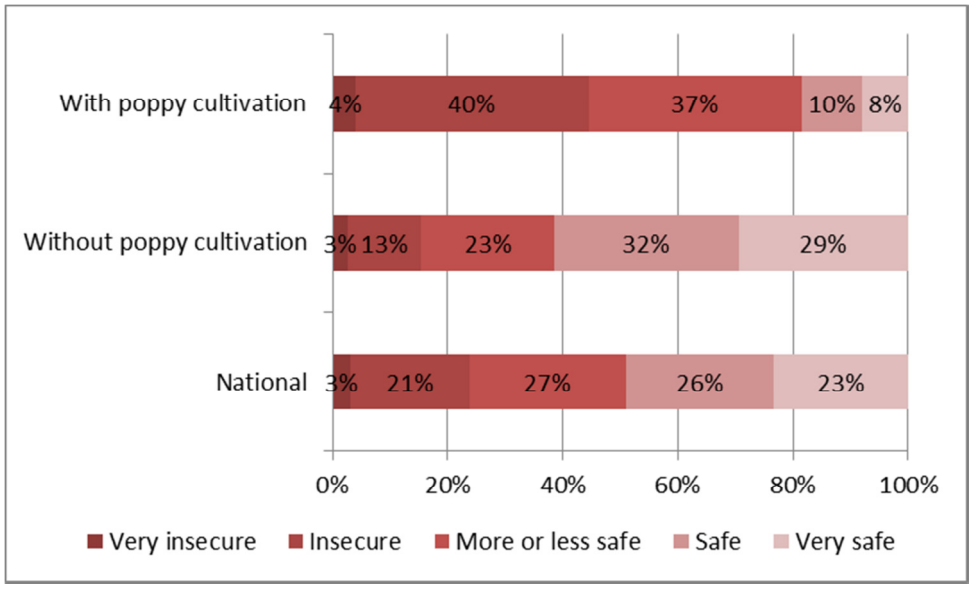
[92] Possible answers were village controlled by Anti-government, Central/regional/local government and others. "With government control" includes all all answers "Central/regional/local government"; "anti-government" and "others" was counted as "without control".

**Table 22: Governance of villages as reported by headmen, by region, 2016**

| | Anti-government | Central/regional/ local government | Others |
|---|---|---|---|
| **Central** | 28% | 67% | 5% |
| **Eastern** | 61% | 36% | 3% |
| **North-eastern** | 14% | 84% | 2% |
| **Northern** | 21% | 73% | 5% |
| **Southern** | 36% | 61% | 3% |
| **Western** | 26% | 53% | 21% |
| **National** | 30% | 63% | 7% |

A similar picture can be seen when looking at security levels. Village headmen were asked to assess whether the village can be considered as very safe, safe, more or less safe, and insecure or very insecure. At national level, about a quarter of village headmen (24 per cent) assessed that the village was insecure or very insecure. Among the opium poppy cultivating villages, almost half of the headmen came to this conclusion (44 per cent), whereas only 16 per cent of those villages without opium poppy cultivation were considered insecure or very insecure.

**Figure 57: Security assessment of village headmen, by opium poppy cultivation status, 2016**




Moreover, it was found that increased influence of insurgency and a deterioration of the security situation in the north of the country coincided with an increase of opium poppy cultivation (see map 5). This was in particular the case in the provinces Badghis, Nangarhar and Sar-i-Pul.

### 4.5.2 Awareness campaigns against opium poppy cultivation

As in previous years, villages without opium poppy cultivation were more likely to report exposure to awareness campaigns against opium poppy cultivation in the village. Overall, 39 per cent of village headmen reported that there was an awareness campaign against opium poppy cultivation in the village. Among poppy villages, 30 per cent of headmen and among non-opium-poppy villages 43 per cent of headmen reported presence of a campaign against opium poppy cultivation.

In 2015, farmers were asked if they saw or heard an awareness campaign against opium poppy. Among opium poppy farmers, 40 per cent saw or heard a campaign; among farmers who stopped cultivation it were 58 per cent and among farmers who never cultivated it was 60 per cent.

**Table 23: Presence of an awareness campaign against poppy, by opium poppy cultivation status, 2016**

| | Awareness campaign against poppy | No awareness campaign against poppy | No answer |
|---|---|---|---|
| **Without opium poppy cultivation** | 43% | 29% | 28% |
| **With opium poppy cultivation** | 30% | 66% | 4% |
| **National** | 39% | 39% | 21% |

The most common sources of the awareness campaigns were Mosque/Mullah, followed by Government official, Radio and Shura.

**Table 24: Most common sources of awareness campaigns against opium poppy cultivation, 2016**

| | Percentage |
|---|---|
| **Mosque/mullah** | 42% |
| **Government official** | 18% |
| **Radio** | 17% |
| **Shura** | 16% |
| **TV** | 5% |
| **Others** | 2% |
| **Billboard** | 1% |

### 4.5.3 Funding of insurgency groups: payments related to opium poppy cultivation

Payments and other form of taxes on opium sales increase the income of insurgency. In 2016, village headmen were asked if opium poppy farmers pay some taxes on their opium sales, to whom they paid it and what percentage of earnings was collected.

In the Western province, as many as 70 per cent of village headmen of villages affected by opium poppy cultivation reported to pay taxes on the income from opium sales; in the Northern province it was 40 per cent. The reported taxes on opium earnings ranged between 1 per cent and 30 per cent and averaged highest at 11 per cent in the Southern region and at lowest 6 per cent in the Eastern region.

Based on these reports, the share of total opium production and the value of the taxes collected can be estimated. In 2016, about 10.2 per cent taxes were collected on 56 per cent of the total opium production.[93] Applying these estimates to the farm-gate value yields US$ 48.7 million collected by non-state authorities in 2016 (corresponding to ~5.4 per cent of the total farm-gate value).

[93] Assuming that if a villages is reportedly controlled by insurgency that this insurgency group controls the opium harvest in this village. The national percentage a weighted average of regional proportions of villages controlled by insurgency, weighted by regional opium production estimates.

If the assumption holds that the same groups collected a similar share of taxes on the earnings of onwards manufacturing and trafficking, a total US$ 160 million (~5.4 per cent of US$ 3.02 billion) would have funded non-state groups in 2016.

**Table 25: Payments to non-state authorities on opium sales, 2016**

| | Percentage of headmen reported that villagers pay tax on opium sales | If yes, percentage of opium earnings paid |
|---|---|---|
| **Central** | 40% | 8% |
| **Eastern** | 43% | 6% |
| **North-eastern** | 5% | 20% |
| **Northern** | 40% | 10% |
| **Southern** | 58% | 11% |
| **Western** | 70% | 8% |
| **Opium production taxed*/Average tax** | **56%** | 10% |

*Note: Opium production taxed and average tax is a weighted average by regional production estimates.*

**Table 26: Recipients of taxes on opium sales as reported by village headmen, 2016**

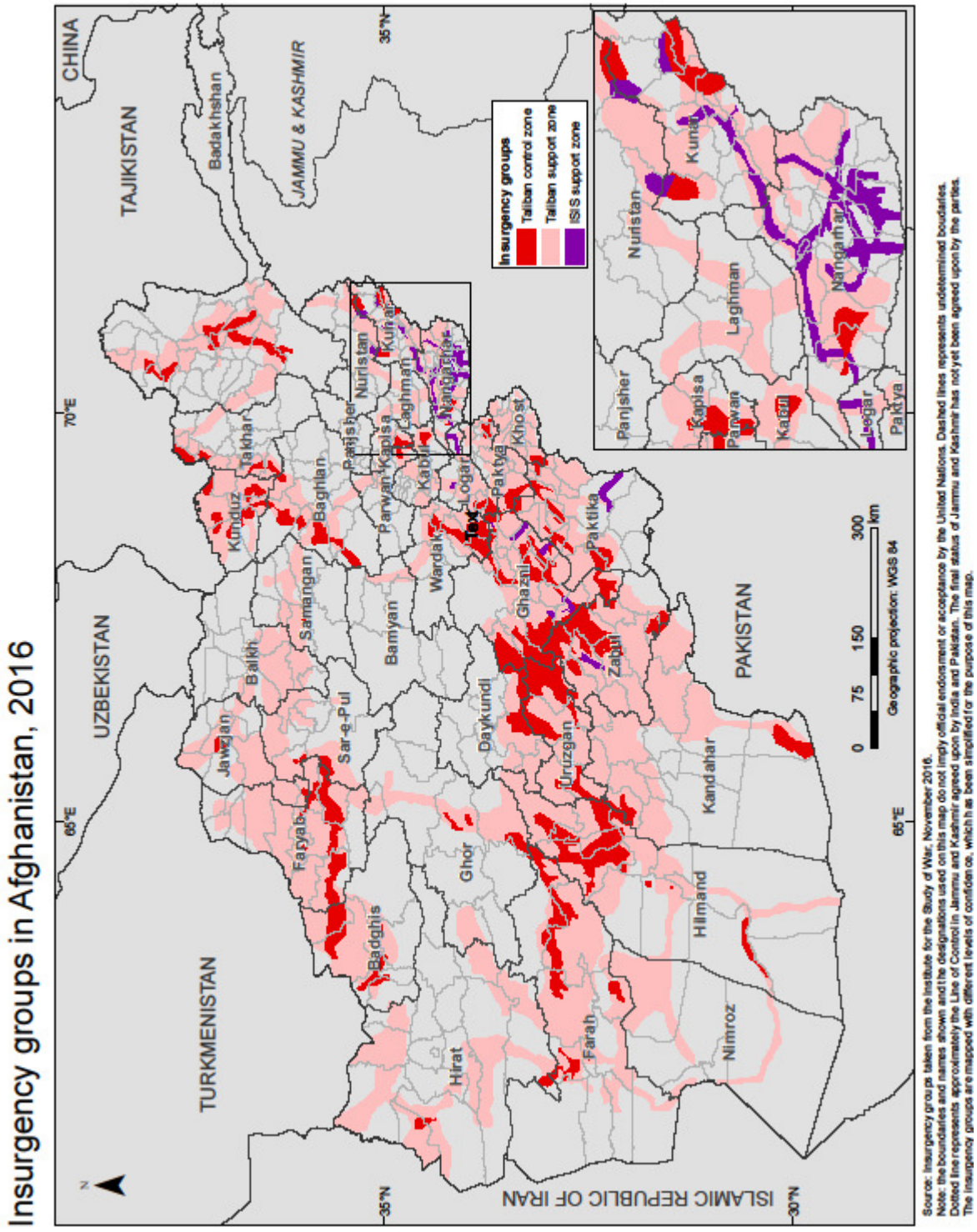
| | To Insurgency | To other non-state groups |
|---|---|---|
| **Central** | : | : |
| **Eastern** | 89% | 11% |
| **North-eastern** | : | : |
| **Northern** | 95% | 5% |
| **Southern** | 56% | 44% |
| **Western** | 67% | 33% |
| **Opium production taxed*** | **63%** | 37% |

*Note: Opium production taxed is a weighted average by regional production estimates. Non-state authorities are not shown for Central and North-eastern provinces because too few samples are available for a robust estimate.*

**Table 27: Share of the farm-gate value collected by non-state authorities, by region, 2016**

| | Farm-gate value (US$ million) | Taxes paid to non-state groups (US$ million) |
|---|---|---|
| **Central** | 5.1 | 0.2 |
| **Eastern** | 136.5 | 3.4 |
| **North-eastern** | 24.7 | 0.2 |
| **Northern** | 35.0 | 1.5 |
| **Southern** | 401.6 | 26.3 |
| **Western** | 295.0 | 17.1 |
| **National** | 898.0 | 48.7 |

**Map 8: Insurgency groups in Afghanistan,[94] February 2016**




Source: Insurgency groups taken from the Institute for the Study of War, November 2016.
Note: the boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Dashed lines represents undetermined boundaries.
Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.
The insurgency groups are mapped with different levels of confidence, which has been simplified for the purpose of this map.

[94] Based on information retrieved from the Institute for the Study of War, understandingwar.org

# 5 Methodology

This chapter covers various methodological aspects regarding survey design and estimation procedure.

## 5.1 Village survey methodology

Village survey activities (such as training, deployment and data collection) were carried out from the end of March to the end of April 2016 by 136 local field surveyors across all provinces. These activities were supervised jointly by MCN and UNODC. The surveyors were selected on the basis of their experience in opium poppy surveys, knowledge of local customs and their acceptance by local communities. Security was generally problematic for the surveyors, but the selection of surveyors actually from the regions surveyed helped to reduce security risks.

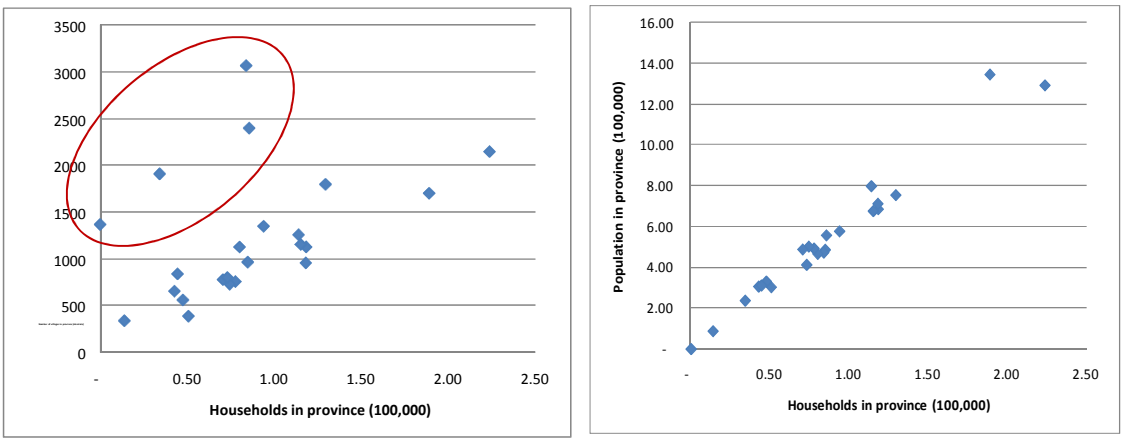
### 5.1.1 Sampling framework and village frame

The sampling frame for the village survey data is comprised of a list of 43,534 villages in Afghanistan, which is based on information from the Central Statistical Office and UN databases. It contains the village name, district, province and location and, for most provinces, also the number of households and average household size of the villages listed. The village frame has not been updated since 2010. In addition to the sampled villages, the surveyors, using their knowledge of the local situation, visited other areas in their provinces to complement their assessment of opium poppy cultivation trends and the security situation throughout the province.

The sample of villages visited was a nationally representative sample. It was drawn by means of a systematic random sampling approach stratified according to regions that assured the sample followed the distribution of village sizes in the frame. The sample size was allocated proportionally to the square root of the size of the region (measured by the number of villages).

The following two figures show scatter plots of the numbers of households (x-axes) together with the numbers of villages (left) and with the population size (right).

**Figure 58: Scatter plots of household data, village data and population data of the village frame**




As one can see, the total population is highly correlated with total numbers of households (all dots align along one line), whereas the number of villages compared to the numbers of households in the province has four remarkable outliers in Day Kundi, Kandahar, Nangarhar and Zabul provinces (all within the red circle). When compared to household numbers a relatively larger number of villages can come from a significantly smaller size of village. However, double counting of villages or other problems with the database cannot be excluded. Deeper analyses of these issues are out of the scope of this survey, but the discrepancies between the number of villages and the number of households in some provinces should be taken into consideration when

interpreting the results. Too large a number (relatively) of villages can lead to an overestimation of indicators of interest.

For the socio-economic survey 2017, an updated list of villages was provided by the Afghan Geodesy and Cartography Head Office (AGCHO).

### 5.1.1 Women's survey

To better understand the role women and women's endowments (health, education and personal assets) play in household decision making, MCN/UNODC conducted 167 interviews with women in opium poppy and non-opium-poppy households. The goal was to provide initial evidence about the influence women and women's empowerment can have on opium poppy cultivation in Afghanistan.

**Table 28: Number of interviewees, by region and opium poppy cultivation in the household**

| Region | Without opium poppy | With opium poppy | Not specified | Total |
|---|---|---|---|---|
| **Eastern** | 5 | 7 | 6 | 18 |
| **North-eastern** | 8 | 9 | 1 | 18 |
| **Northern** | 16 | 37 | 1 | 54 |
| **Southern** | 18 | 7 | 5 | 30 |
| **Western** | 27 | 20 | 0 | 47 |
| **Total** | **74** | **80** | **13** | **167** |

### 5.1.2 Obtained samples and observations in the village survey

In 2016, a total of 1417 villages were successfully visited. Surveyors sought to interview three farmers in each village: one opium-growing farmer; one who had discontinued opium poppy cultivation; and one who had never grown opium. In poppy-free villages, less than three farmers were interviewed. Interview partners were recruited by opportunity sampling. This resulted in 2,121 interviews with farmers and 1417 interviews with village headmen.

**Table 29: Numbers of villages and interviews conducted in 2016**

| Region | Villages in sampling frame | Number of villages visited (headmen interviews) | Farmers who stopped growing | Farmers who never grew opium poppy | Opium poppy farmers |
|---|---|---|---|---|---|
| **Central** | 10,602 | 293 | 38 | 311 | 12 |
| **Eastern** | 3,571 | 171 | 92 | 91 | 82 |
| **North-eastern** | 3,668 | 170 | 34 | 161 | 21 |
| **Northern** | 7,162 | 249 | 101 | 240 | 62 |
| **Southern** | 11,749 | 315 | 109 | 212 | 147 |
| **Western** | 6,782 | 219 | 121 | 204 | 83 |
| **National** | **43,534** | **1,417** | **495** | **1,219** | **407** |

### 5.1.3 Surveyor training

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

During the training period, a total of 136 surveyors were trained in the use of the survey form and techniques by MCN survey coordinators and supervised by UNODC survey coordinators. Surveyor training began in March 2016. The training included practical (use of GPS, etc.) and theoretical aspects (interviewing and dialogue with village headmen and farmers).

**Data collection**

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

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

**Debriefing**

After the survey, surveyors were debriefed by survey coordinators. This helps understand the difficulties surveyors may have encountered (for example, due to the difficult security situation) and whether questions were properly understood by respondents.

## 5.2 List of indicators presented to visualise the development gap

All indicators are present/absent indicators. Percentages presented in the graphs are percentages of opium-poppy/non-opium-poppy villages with the respective indicator present.

| Visible name | Relevant for SDG | Description |
|---|---|---|
| **Income** | 1 | Average per-person income of all farmers in the village is greater than international threshold for extreme poverty (1.25 US$ PPP) |
| **Food security** | 2 | Headmen reported that no household in the village experienced food insecurity |
| **Health care** | 3 | Villagers have access to a medical centre |
| **Health care female** | 3 | Villagers have access to a medical centre with female staff |
| **Boy school** | 4 | Villagers have access to a boy's school |
| **Girl school** | 4 | Villagers have access to a girl's school |
| **Electricity** | 7 | Public electricity from the grid is available |
| **Off-farm employment** | 8 | Access to off-farm employment is very easy, easy or more or less easy |
| **Local market** | 8 | A local market is available in the village |
| **Roads** | 9 | Village has a road |
| **Public transport** | 9 | Some form of vehicle provides a ride for a fare in the village |
| **Farmers' cooperatives** | 9 | Farmer's cooperative available |
| **Industries** | 9 | Small scale industries or manufacturing are available |
| **Soil quality** | 15 | Soil quality is "good" or "very good" |
| **Security** | 16 | Security level in village is "very safe" or "safe" |
| **Government control** | 16 | The village is under control of the government |

## 5.3 Average farm-gate price and farm-gate value of opium production

Since 2009, farm-gate prices at harvest time have been derived from the opium price monitoring system and refer to the month when opium harvesting actually took place in the different regions of the country, which is thought to reflect opium prices at harvest time better. To calculate the national average price, regional price averages were weighted by regional opium production. The opium price in the Central region was calculated from the annual village survey, as there is no monthly opium price monitoring in that region.

The farm-gate value of opium production is the product of potential opium production at the national level multiplied by the weighted average farm-gate price of dry opium at harvest time. The upper and lower limits of the range of the farm-gate value were determined by using the upper and lower opium production estimate.

## 5.4 Estimating the value of the Afghan opiate economy

### 5.4.1 Key components and underlying assumptions

**Conversion factors.** The yearly updated factor used refers to the conversion of opium into heroin of export quality. The heroin figures calculated here refer to "brown" heroin base. More opium is needed for the production of 1 kilogram of pure white heroin (heroin hydrochloride). However, the export of such high-quality white heroin from Afghanistan appears to be very limited in comparison to that of brown heroin, thus the production and export of white heroin were not considered in this estimation. For details of the calculation of the conversion ratios please refer to the *Afghanistan Opium Survey 2015: Cultivation and Production*.

**Precursor substances.** For the production of 1 kilogram of heroin, 1.5 litres of the costly precursor substance acetic anhydride is needed (updated in 2011 from 2.5 litres).

**Purity.** The calculation of the value of the opium economy is limited by the fact that the drug products leaving laboratories in Afghanistan may undergo further processing, such as adulterations, before reaching assumed points of sale in neighbouring countries. Indeed, there is evidence that heroin is already mixed with cutting agents in Afghanistan. This is done to increase profitability but can also be done for other reasons, such as tailoring the drug product for specific usages,[95] which not only alters the volume of the drug exported but also influences costs.

**Amounts of opium converted to morphine/heroin.** When estimating the amount of opium converted to heroin, seizures in Afghanistan and in neighbouring countries, such as the Islamic Republic of Iran, Pakistan and Central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan), are considered in the model. There are indications of direct drug exports to China and India as well as to other countries by air or land, but the amounts trafficked through those routes are thought to be comparatively small and are not considered in the model. All seizure data from Afghanistan and neighbouring countries is used for the estimation, which implicitly assumes that the shares converted in and exported from Afghanistan are proportional to all seizures made in those countries. For details of the calculation please refer to the *Afghanistan Opium Survey 2015: Cultivation and Production*.

**Morphine/heroin.** No difference is made between morphine and heroin in their estimation. Morphine and heroin are both treated as heroin in the calculations of the ratio of opium converted to heroin.

**Income from trafficking.** The value of exported opium (partly transformed into morphine/heroin) was based on its value at border areas with neighbouring countries. Opiates are usually trafficked to neighbouring countries by Afghan traffickers who, in general, are involved in shipping opiates over the borders, from where traffickers from neighbouring countries take over the consignments. The total gross value of exported Afghan opium can therefore be estimated by multiplying wholesale prices of opium and heroin in the border regions of neighbouring countries by estimated amounts of drugs trafficked.

[95] See UNODC (2009): *World Drug Report 2009*, p. 61, where evidence from the forensic laboratory of CNPA is presented confirming the use of various cutting agents in Afghanistan in 2008.

**Domestic market.** The calculation of opiates consumed within Afghanistan uses the drug use estimates from the 2009 Drug Use Survey implemented by the Government of Afghanistan and UNODC, as well as more recent price data. The underlying assumption is that the quantity used has not changed since 2009, which is a simplification due to the lack of more recent data.

**Gross and net export value.** For the calculation of gross export value, the potential volumes of opium and heroin exported to neighbouring countries were multiplied by the corresponding average cross-border prices. The total gross export value is the combined gross export value of opium and morphine/heroin exports. As indicated above, morphine exports are not considered separately and all processed opium exports are assumed to be in the form of heroin. To estimate the net value, the value of imports has to be subtracted from the gross value of all final goods, since this is income lost to the exporting country (Afghanistan). There are many imports necessary for opiate production but only imports of the main precursor substance for heroin production were considered in the calculation.

### 5.4.2 Components of the estimation

The opium economy estimation process includes the following steps:

- Estimation of the gross value of the domestic market for heroin/morphine and opium;
- Estimation of the gross export value of the remaining opium in the form of opium or heroin/morphine, after deducting seizures and domestic consumption. The respective value is calculated by multiplying quantities by prices in respective neighbouring countries;
- Estimation of the net value of the economy by subtracting the costs of imported precursors used for the production of domestically consumed opiates and the gross export value of remaining opiates;
- Therefore, up-to-date cross-border (for the export value) and end-consumer market (for the domestic market value) prices are needed, as well as the prices of the main precursor substances;
- Furthermore, in order to estimate the amount of opium needed for each of those markets a conversion factor for opium into morphine and heroin is needed.

The gross value of Afghan opium production at end-consumer level and at the country's borders is calculated by the amounts consumed and traded multiplied by their respective prices. The net value of opiate production is the gross value minus all expenditure for imports from abroad needed for processing opium into morphine and heroin and results in a net gain for the Afghanistan economy. Net value is considered to be more suitable for comparison with GDP than gross value.

Seizures are not represented in these calculations, as the income that would be generated by seized products is lost. The value of the domestic market at end-consumer level is calculated by multiplying the amounts consumed by the street-level price for heroin/morphine and opium, respectively. The cross-border price was used to calculate the value of the potential exports of opium and opiate products.

The calculation of a possible range in the potential value of the Afghan opiate economy is based on different assumptions about the portion of opium converted to heroin or morphine for export. In the case of the upper bound, it is assumed that all opium available for export is converted to morphine or heroin in Afghanistan. For the lower bound it is assumed that all opium available for export is exported unprocessed and that no conversion to morphine/heroin takes place in Afghanistan.

The resulting ranges are not meant to provide a confidence interval or any other statistical measure, but rather they constitute a what-if analysis that offers results on the basis of different assumptions about the further processing of opium in Afghanistan.

### 5.4.3 Prices

Until 2015, for Pakistan, the cross-border price of opium was the simple average of the average monthly wholesale price in Peshawar, Pakistan and the average monthly wholesale price in

Quetta, Pakistan, collected via MCN Afghanistan opium price monitoring system. However, in 2016 the collection in Pakistan was discontinued. The source for prices of heroin and opium in neighbouring countries are the Annual report questionnaires submitted by Member States to UNODC. The simple average of these prices was used for estimating the value of exported opiates. It should be noted that price information has strong limitations and needs to be improved in order to enhance the reliability of the estimate.

### 5.4.4 Estimation of domestic consumption of opiates

In 2009, the Ministries of Health and Counter Narcotics, in collaboration with UNODC, implemented an extensive national drug use survey in Afghanistan,[96] in which the number of opium and heroin users in the country was estimated to be 230,000 (210,000-260,000) and 120,000 (110,000-140,000), respectively. These numbers account for poly-drug use, i.e. one person is counted in both groups if using both opium and heroin.

The report provides information on the numbers of days that both groups consume the drugs. This information, together with the average amount spent on each drug per day, can be used to calculate the total amount spent on opium and heroin in Afghanistan in a given year. This total amount divided by the average end-consumer price gives the total quantity consumed. As there were no end-consumer prices available for 2009, the earliest (and lowest) data available, which was the price average of October 2010, was used. The price of 1 kilogram of heroin was reported to be US$ 6,300 and of 1 kilogram of opium to be US$ 530. Combining the price data with the other estimates yields the results shown in the following table.

**Table 30: Domestic opiate market, 2009**

| | Days consumed, 2009* | Total expenditure (US$), 2009 | Total consumption (tons) | Average daily consumption (grams) |
|---|---|---|---|---|
| **Opium** | 58,045,000 | 92,872,000 | 175 | 3 |
| **Heroin/ Morphine** | 34,142,000 | 75,113,000 | 12 | 0.4 |

*Source: Ministry of Counter Narcotics/Ministry of Health/UNODC: Drug Use in Afghanistan: 2009 Survey.*

The resulting average daily consumption is a sensible magnitude for Afghanistan and is confirmed by regular non-representative use surveys undertaken by MCN/UNODC among heavy users in Afghanistan. It should be noted that there are indications that the quality of heroin/morphine at street level is very poor. When multiplying these quantities consumed by current end-consumer level prices, the value of the domestic opiate market can be calculated.

## 5.5 Funding of insurgency groups

The MCN/UNOD village survey has asked village headmen three questions that are relevant for estimating the percentage of earnings from opium production of insurgency groups.

- Do villagers pay some form of money for the opium they sell? (Yes/No)
- If yes, to whom do they pay? (Insurgency/Others)
- If yes, what percentage of their opium earnings is collected? (Percentage)

All analysis is performed at the regional level.

[96] Ministry of Counter Narcotics/Ministry of Health/UNODC: Drug Use in Afghanistan 2009 Survey.

**Table 31: Percentage of village headmen of opium poppy cultivating villages who reported that villagers pay some form of money for the opium they sell, by region**

| Region | Percentage of opium poppy villages reported to pay some form of tax for opium sales |
|---|---|
| **Central** | 40% |
| **Eastern** | 43% |
| **North-eastern** | 5% |
| **Northern** | 40% |
| **Southern** | 58% |
| **Western** | 70% |

**Table 32: Average percentage of opium sales value paid to insurgency/others, by region**

| Region | Average percentage of opium poppy sales paid to insurgency/others |
|---|---|
| **Central** | 8% |
| **Eastern** | 6% |
| **North-eastern** | 20% |
| **Northern** | 10% |
| **Southern** | 11% |
| **Western** | 8% |

### 5.5.1 Share of the farm-gate value funding insurgency

To estimate the share of the farm-gate value that is paid in form of taxes to insurgency/others, two key assumptions are made. First, the share of opium poppy villages for which a tax on opium poppy was reported in a region, corresponds to the share of opium production that is taxed. Second, taxes are collected from the farm-gate price of opium as reported in the price monitoring system (which is used as well for calculating the farm-gate[97] value of opium).

With these two assumptions, the share of opium production subject to taxes and subsequently the amount of money funding insurgency/others can be calculated. The share of the farm-gate value calculated as tax in a region is the product of the percentage of opium-poppy villages that reported taxes multiplied with the average percentage collected from earnings. To provide an example, In the Eastern region 40 per cent of village headmen reported that taxes are paid, and the average amount collected was 6 per cent, thus 2.5 per cent of the farm-gate value funds non-state authorities.

[97] See as well, MCN/UNODC *"Afghanistan opium survey report 2016 - cultivation and production."*

**Table 33: Average percentage of the farm-gate value paid to insurgency/others, by region, 2016**

| Region | Share of the farm-gate value collected as tax | Farm-gate value in millions US$ | Taxes collected per region in millions US$ |
|---|---|---|---|
| **Central** | 3.0% | 5 | 0.15 |
| **Eastern** | 2.5% | 136 | 3.37 |
| **North-eastern** | 1.0% | 25 | 0.25 |
| **Northern** | 4.2% | 35 | 1.47 |
| **Southern** | 6.6% | 402 | 26.31 |
| **Western** | 5.8% | 295 | 17.13 |
| **National*** | **5.4%** | **898.0** | **48.7** |

*Note: The national average is the average of the regional shares weighted by the regional farm-gate values.*

### 5.5.2 Share of the value of the opiate economy funding insurgency

The gross value of the opiate economy comprises the farm-gate value of opium and income generated by onwards processing and trafficking to Afghanistan's border. Under the assumption that the results from the village survey can be transferred to the whole value chain of opiate production in Afghanistan, 5.4 per cent of the value of the opiate economy, which amount to US$ 3.02 billion in 2016, were earned by insurgency and other groupings in 2016, yielding US$ 164 million of taxes alone (including the income from the farm-gate value).

To answer this question with greater precision, more information on the control of processing and trafficking of opiates, distribution practices and taxes collected from these activities would be needed.