THEMATIC EVALUATION OF
THE TECHNICAL ASSISTANCE PROVIDED TO
AFGHANISTAN BY THE UNITED NATIONS
OFFICE ON DRUGS AND CRIME

Volume 6
Illicit Crop Monitoring Programme

Independent Evaluation Unit
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Summary

The overarching objective of the global Illicit Crop Monitoring Programme is to establish a methodology for data collection and analysis and to increase governments’ capacity to monitor illicit crops (opium, cannabis and coca). The immediate objective of Illicit Crop Monitoring Programme in Afghanistan is to further the knowledge of the extent and migration of the opium production throughout the country and make this information available nationally and internationally.

During the 1990s, Afghanistan consolidated its position as the largest worldwide source of illicit opium and its main derivative, heroin. Currently it produces 93 per cent of the illicit opiates in the world and the value of the opium economy was at a level between 46 and 60 per cent of the licit GDP in the last five years. The rapid spread of opium cultivation in area and the increasing number of people involved in illicit agriculture in the post-Taliban era (after 2002) induced the creation of the Ministry of Counter Narcotics in December 2004. A key objective of the Illicit Crop Monitoring Programme has been to strengthen the capacity of the Government of Afghanistan to monitor and analyse illicit crop cultivation and estimate production to support the development of appropriate counter narcotic policies.

In 2007 the Independent Evaluation Unit of UNODC carried out five programme evaluations as part of “UNODC Technical Cooperation to the Government of Afghanistan” evaluation, namely, Alternative Livelihood, Rule of Law, Law Enforcement, Drug Demand Reduction and Illicit Crop Monitoring. The objective of the Illicit Crop Monitoring Programme evaluation was to examine the relevance, effectiveness, efficiency, impact, and sustainability of the programme. It aimed to provide usable recommendations to UNODC staff and management about field operations that would enable the Illicit Crop Monitoring Programme to enhance its impact in the country. It was focussed on five main products provided by the Illicit Crop Monitoring Programme: the Opium Winter Rapid Assessment Survey, the Annual Opium Poppy Survey, Opium Price Monitoring, Eradication Verification Survey and Capacity Development at the Ministry of Counter Narcotics.

The evaluation team held discussions with UNODC staff in Vienna involved in programme management of the Illicit Crop Monitoring Programme or as users of information generated by the Illicit Crop Monitoring Programme for policy-making. The team also interacted with implementing teams in Kabul at UNODC and the Ministry of Counter Narcotics, donors, researchers and policy makers at international, national and provincial level. About 50 stakeholders were interviewed and efforts were made to evaluate the project in a relaxed environment and in a participatory manner. Preliminary results of the evaluation were shared with the management and Illicit Crop Monitoring Programme staff of UNODC Country Office in Afghanistan at the end of the field work to validate the observations, findings and recommendations.
Impact

The world at large is the user of three core Illicit Crop Monitoring Programme products: area and production of opium in different agro-ecological conditions and the price of opium and opiates in different markets throughout Afghanistan. Since most of the opiates sold in the world originate in this country, the implication for worldwide public health cannot be over-emphasized. It is estimated that in 2007, 509,000 rural households, approximately 3.3 million people, were involved in opium agriculture with a farm-gate value of production of $US 1 billion. But the lion’s share of the opium economy, US$ 3 billion, goes to processors, traders, traffickers and exporters with associated problems to drug trafficking and organized crime, corruption and possible financing of insurgency. Opium remains a low-risk crop in a high-risk environment for both farmers and traders. The relevance and impact of Illicit Crop Monitoring Programme as an impartial, effective and reliable monitor of the opium cultivation and production is unquestionable.

Outcome

The opium surveys have raised public awareness nationally and internationally, and have promoted governmental and intergovernmental actions to address illicit drug economy concerns. The programme helped develop robust methodologies for estimating opium crop area, yield and price, and made a meaningful contribution in preparing the World Drug Report. The programme also contributed to building the capacity of the Ministry of Counter Narcotics in order to carry out future surveys by the Government of Afghanistan.

Efficiency

The Illicit Crop Monitoring Programme has developed a tradition of efficiency and high quality in product delivery. It is difficult to quantify the social benefits of these products, but we know that Illicit Crop Monitoring Programme’s annual cost is about US$ 2 million. The Illicit Crop Monitoring Programme products are appreciated by the Government of Afghanistan and the international community without signs of donor fatigue. The programme has been sustained for 14 years and has shown flexibility and resilience in adapting to the ever changing environment relying on concerted efforts from the Ministry of Counter Narcotics, and UNODC offices in Kabul, Tashkent and Vienna.

Effectiveness: cultivation and production estimates

Crop hectarage and production estimation of opium has been carried out since 1994. Initially, monitoring was done relying on village surveys, but the introduction of remote sensing techniques in 2002 was a major improvement in the monitoring methodology. Since 2002, the coverage by satellite data has been adapted to the changing conditions in the country. The remote sensing approach and the methodologies used to estimate area and production are state-of-art and scientifically sound. While the remote sensing approach remained the same, the interpretation method changed from a digital classification to a visual interpretation.
This is a welcome step, considering the need to train the Ministry of Counter Narcotics staff to interpret satellite data. The cultivation estimates were further improved by generating agricultural statistics for the entire country based on 2006 Landsat images. The agriculture mask, which is used for distributing frame samples, could be improved by preparing the cropped area maps for ~ 5 years to capture permanent cropped areas, short fallow and long fallow areas.

Production estimates were made by volume measurement of a large number of opium capsules in the field. Estimates were improved by sampling three fields of different opium crop quality (good, moderate, poor) in each village. Although there is not a major issue related to production estimates, some inputs on quality of crop from remote sensing images may be worth revising for possible improvement. Delivering opium poppy production estimations in Afghanistan under difficult security conditions is very challenging.

**Effectiveness: opium price monitoring**

Opium price monitoring, and opium area and production estimates permit the valuation of the national opium production. The value-chain analysis methodology developed by the Illicit Crop Monitoring Programme was originally described in 2004, and has made a meaningful contribution to the World Drug Report since 2005. Some methodological aspects in price monitoring could be improved through the analysis of tradeoffs between telephone or personal interviews to gather market intelligence, size of the pool of informants and frequency of collected prices in key provinces.

**Effectiveness: village survey**

The socio-economic data on the household level gathered through the village survey have some limitations due to the unknown effects of the non-random sampling of farmers within a sampled village on the results of the survey. The reliability and proportion of methods used in the interviews are also unknown (i.e., memorisation, note-taking and filling questionnaires in front of the farmers). In addition, the redistribution of villages at the end of the stratified random sampling procedure should be examined. The socio-economic data and survey results, as well as opium price data are stored as separate files in MS Access and MS Excel. They are analysed separately and linked with the spatial databases. Proper software for systematic statistical analyses is lacking.

**Sustainability: capacity-building**

Since 2005, the Illicit Crop Monitoring Programme embraced an ambitious programme on capacity building for the Ministry of Counter Narcotics to hand over most of the responsibilities of crop monitoring to the Ministry of Counter Narcotics by 2010 with minor supervision by UNODC. Formal and informal training in remote sensing, Geographic Information System (GIS), data interpretation, computer literacy and survey techniques, project management and English report writing has been provided by in-house trainers and consultants. The activities
considerably strengthened the capacity of the Ministry of Counter Narcotics staff so that, starting with the Opium Winter Rapid Assessment Survey 2006, both the Ministry of Counter Narcotics and Illicit Crop Monitoring Programme Kabul have shared responsibilities in data processing and interpretation. Activities for 2008 to 2011 are included in the most recent Illicit Crop Monitoring Programme work plan. However, there are no quantitative or qualitative indicators of the progress to be achieved by the Ministry of Counter Narcotics personnel holding key positions. A structured scheme for capacity development is missing, and due to the present status of technical know-how, problems to retain qualified staff and resources available at the Ministry of Counter Narcotics Kabul and provinces, it is unlikely that the devolution of the programme to the Ministry of Counter Narcotics will take place by 2010.

**Recommendations**

The Illicit Crop Monitoring Programme should continue to monitor area and yield under opium cultivation and opium prices to enable the Government of Afghanistan and the international community to design counter narcotics policies in accordance with prevailing conditions. Possible improvements in area and production estimates or opium price monitoring should be considered more in relation to policy design rather than technology or data-driven precision under the current volatile situation in the country.

Opium eradication is a policy instrument to deter farmers from growing opium poppy and the involvement of the Illicit Crop Monitoring Programme in eradication verification could jeopardize its image as a credible and impartial monitor. The Illicit Crop Monitoring Programme should consider the benefit of its involvement in eradication verification towards effective counter narcotics policy development.

UNODC management needs to ascertain whether the Illicit Crop Monitoring Programme Kabul should be considered as a monitoring service entity or whether there is latitude for research in agro-ecological characterisation and opium poppy yield modelling, value chain analysis or integration of opium markets with possible incursions in counter narcotics policy analysis. Under the research option, there would be a steep mountain to climb and this would require extra mentorship support. Under the monitoring option, on the one hand there are some methodological issues to be addressed that determine the quality of socio-economic data gathered from the field surveys. On the other hand, there is need to lift the know-how of the staff in Kabul, both at UNODC and the Ministry of Counter Narcotics, on data gathering, quantification and interpretation of results.

Caution should be used to avoid making generalisations based on the surface of the Annual Opium Poppy Survey socio-economic data and ignoring its limitations. The Illicit Crop Monitoring Programme’s effort to provide a socio-economic context to the opium industry using household surveys is appreciated. However, this context should be provided by the National Risk and Vulnerability Assessment, a nationwide household survey carried out every other year under the umbrella of the Central Statistics Office. This would liberate some effort and financial resources to reallocate to area and production and price monitoring where the Illicit Crop Monitoring Programme has shown a comparative advantage.
A proper statistical package should be acquired for analysis of survey data. Also, a policy for storing and accessing the data generated by the programme should be prepared. This would enhance the usage of information and would provide feedback to the Illicit Crop Monitoring Programme staff on other products and analyses which could be derived with the programme’s data.

The Illicit Crop Monitoring Programme should alert the donors and other stakeholders that the devolution of the programme to the Ministry of Counter Narcotics is unlikely to happen by 2010, as originally intended. A strategic plan for capacity development is highly recommended. The strategic plan should build on its existing “plan for capacity building”, and include agreed quantifiable indicators for the acquisition of skills to devolve the management of the Illicit Crop Monitoring Programme to the Ministry of Counter Narcotics etc. The plan should promote efficiency in using scarce resources through better coordination, more effective implementation at all levels and the promotion of an integrated approach to allow optimal resource use and timely transfer of knowledge, as well as full ownership of the programme by the Afghan authorities. A work plan including personal responsibilities, financial arrangements, logistics, timetables and a process of monitoring scheme also need to be designed and agreed upon.
I. Introduction

A. Background and context

1. During the 1990s, Afghanistan consolidated its position as the largest worldwide source of illicit opium and its derivative, heroin. By the end of the 1990s, it provided about 70 per cent of the global illicit opium production. It was estimated that in 2003 the number of consumers of illicit opiates in South West Asia, Central Asia, Europe, South Asia, the Arabian Peninsula and Africa was 9 to 10 million, or two thirds of all opiate users in the world. In 2001, following the ban imposed by the former Taliban regime, an abrupt decline of illicit opium poppy cultivation interrupted the two-decade increase, but, stimulated by a subsequent 10-fold increase in opium prices, cultivation resumed at high level in 2002 and started to spread outside of traditional cultivation areas. The share of the opium economy was at a level between 46 and 60 per cent of the licit GDP in the last five years.

2. While Afghanistan struggles to become food self-sufficient, the production of opium continues to rise. It is in the agricultural domain where the need for food and income have to be met by services and economic alternatives generated through the efforts of the emerging state with the support of the international cooperation, including the Food and Agriculture Organisation of the United Nations (FAO) and the United Nations Office for Drugs and Crime (UNODC). To reverse the dependency on the drug economy, it is necessary to address the causes of food and income insecurity in the rural sector, among other factors.

3. The United Nations Drug Control Programme based in Islamabad, Pakistan, monitored opium poppy cultivation in Afghanistan since 1994 with the authorisation of the Taliban regime. In 1998, the United Nations General Assembly Special Session entrusted the UNODC with the responsibility to monitor the illicit cultivation of opium poppy, coca and cannabis and compile data at the global level. In 2001 the UNODC transferred its office from Islamabad to Kabul to enhance the cooperation with the Provisional Islamic Government and formally initiate an Illicit Crop Monitoring Programme. Measurements of opium poppy ground cover complemented with satellite imagery enable calculations of national production. This information is supplemented with agricultural and socio-economic information that enables the understanding of the opium value chain, from producers to exporters, including price information of opium and its derivatives for the estimation of the total value of the opium economy.

4. The rampant spread of opium poppy cultivation, both in the number of households and in production, induced the creation of the Ministry of Counter Narcotics in December 2004. The Ministry of Counter Narcotics is meant to institutionalize the Counter Narcotics policy at the national scale. Since December 2005 UNODC and the Ministry of Counter Narcotics have signed a Memorandum of Understanding to implement the Illicit Crop Monitoring Programme. A key objective of the Illicit Crop Monitoring Programme is to strengthen the capacity of the government to monitor and analyse illicit crop cultivation and estimate

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2 Papaver somniferum, Cannabis sativa, Erythroxylum coca, respectively.
production data with the aim to develop appropriate drug control policies. Almost complete devolution of the Illicit Crop Monitoring Programme to the Ministry of Counter Narcotics is scheduled by 2010 with minor backstopping by UNODC with offices in Kabul, Tashkent and Vienna. The abridged evolution of the Illicit Crop Monitoring Programme in Afghanistan, and the use of human and financial resources are included in Annex I, Table 1.

B. Executing modality

5. UNODC implements the Illicit Crop Monitoring Programme in Afghanistan under the F-98 project with funding from the UK, Finland and the US. The Research and Analysis Section of UNODC, Vienna, coordinates the Illicit Crop Monitoring Programme, provides technical assistance and contributes to quality control. The Illicit Crop Monitoring Programme is hosted by UNODC Country Office in Afghanistan and is implemented with a team comprised of an international project coordinator, a national project coordinator and a technical team consisting of survey experts, a database expert and remote sensing analysts. Since 2005 the Ministry of Counter Narcotics and UNODC operate under a Memorandum of Understanding to jointly implement crop monitoring and production and build the national capacity: starting in 2007, the programme is technically supervised by the Regional Monitoring Expert for South West and Central Asia based in UNODC Tashkent. The Survey and Monitoring Directorate of the Ministry of Counter Narcotics has identified a team comprised of a director, survey experts, technical experts and field surveyors. In 2005, the I-38 project was created for the verification of the poppy eradication programme and it was merged into the F-98 project in 2006 with a combined outlay of US$ 2.1 million. The US is the major donor for the eradication verification component of F-98. The Royal Norwegian Embassy has pledged US$ 500,000 for 2008 in support to the opium cultivation and production survey.

C. Scope of the evaluation

6. The scope of an evaluation can be based on products and processes required for their delivery; as such, the inputs, processes and outputs of the Illicit Crop Monitoring Programme are illustrated in Annex I, Fig. 1. There are five main outputs: the Opium Rapid Assessment Survey, the Annual Opium Poppy Survey, Opium Price Monitoring, Eradication Verification Survey and Capacity Development at the Ministry of Counter Narcotics. The Annual Opium Poppy Survey entails area, cultivation and yield surveys, as well as village and farmers’ surveys.

D. Purpose and objective of the evaluation

7. The evaluation of the Illicit Crop Monitoring Programme was conducted as part of the 2007 work plan of the Independent Evaluation Unit and under the ‘UNODC technical Cooperation to Afghanistan’. As such, this evaluation has been done almost in tandem with four other programme evaluations, namely, Rule of Law, Law Enforcement, Alternative Livelihood and Drug Demand Reduction. The purpose of the Illicit Crop Monitoring Programme evaluation was to assess how the
UNODC development cooperation builds the capacity of the Afghanistan government to monitor and provide accurate and timely information on poppy production to the national and international stakeholders, as well as how effectively the programme has created more information and knowledge. The objective of the evaluation was to examine the relevance, effectiveness, efficiency, impact, and sustainability of UNODC’s actions three years before its tentative devolution of the Illicit Crop Monitoring Programme to the Afghan government by 2010. This evaluation was meant to provide feedback to UNODC staff and management about field operations and interactions with headquarters, to state lessons learned that would enable the program to enhance its impact in the country, and propagate best practices to other countries served by UNODC.

E. Evaluation methodology

8. The Independent Evaluation Unit provided guiding principles for evaluation, standards and norms of evaluation in the United Nations system to the evaluation team (terms of reference for this evaluation are shown in Annex II). The evaluators prepared an evaluation design matrix with specific questions, persons to be interviewed and the process of data collection, analysis, organization and presentation. Discussions were held with UNODC staff in Vienna involved as programme managers of the Illicit Crop Monitoring Programme or as users of information generated by Illicit Crop Monitoring Programme for policy making. The team also interacted with implementing teams in Kabul at UNODC and the Ministry of Counter Narcotics, donors, researchers, policy makers and other users. Visits with field staff took place to understand the process and capacity development initiatives. The Balkh province in the north was visited to get acquainted with the provincial UNODC office and the Ministry of Counter Narcotics Regional Office (one out of six in the country) and visited the Vazirabad village, Balkh district, to assess the capability of field surveyors on the ground. The headman of the village graciously organized a meeting with 30 farmers to assess some issues related to survey implementation and rural development in general.

9. The evaluation team studied the historical and contextual review of the programme, a comprehensive desk review of external and internal policy, programme and survey reports (Annex IX), including review of official documents, budgets, reports, websites, and other publications. About 50 stakeholders were interviewed (Annex III). Efforts were made to evaluate the programme in a participatory manner and in an informal atmosphere, giving weight to the self-assessments of different stakeholders and triangulating the information collected to draw conclusions on findings. Contact with the UNODC Research and Analysis Section in Vienna and the Country Office in Afghanistan was maintained during this process. The preliminary results of the evaluation were shared with the Country Office in Afghanistan management and Illicit Crop Monitoring Programme staff in Kabul on 26 November 2007 to validate the observations, findings and

3 The evaluation team could not interview the original intended list of stakeholders due to several factors not foreseeing such as availability of personnel, unavailable ground transportation, limited time or natural events.

4 Originally the team requested to travel to the south where the largest proportion of opium poppy is grown, but the security situation inhibited to obtain permission for this visit.
recommendations. The evaluation report was shared with the Research and Analysis Section and the Country Office in Afghanistan and all relevant comments and inputs have been considered for the preparation of the final document.

II. Analysis and major findings

A. Relevance

10. It is estimated that 509,000 households in Afghanistan, approximately 3.3 million people, are involved in opium poppy agriculture with a farm-gate value of production of US$ 1 billion. But the lion’s share of the opium poppy economy, US$ 3 billion, goes to processors, traders, traffickers and exporters.\(^5\) The Illicit Crop Monitoring Programme and FAO play a key role in gathering data and analysing the trends in the illicit and licit agricultural economy, respectively.\(^6\) Opium poppy and wheat production during the last eight years are depicted in Annex I, Fig. 2; opium poppy remains a low-risk crop in a high-risk environment for both farmers and traders. The relevance of the Illicit Crop Monitoring Programme products to address public health issues stems from the widespread availability of heroin in the country and in the markets abroad. Likewise, poor rule of law and law enforcement, and widespread poverty and corruption are linked to the opium economy on the rise.\(^7\) Thus, monitoring of the opium cultivation, production, processing and trade in Afghanistan has large implications for regional and global security.\(^8\)

B. Efficiency

11. The Opium Winter Rapid Assessment Survey results are delivered by mid-February every year. Timeliness of this information is vital for procuring satellite data for cultivation monitoring. Based on this information, national, bilateral and multilateral stakeholders refine counter narcotics strategies. The Annual Opium Poppy Survey results (including price monitoring and verification eradication) are revealed by mid-August, but prior to this, interim results for key provinces are shared with UNODC top management and leading countries in counter narcotics programmes. The Executive Summary of the Annual Opium Poppy Survey is released by the end-August and the final report is distributed in October. The entire sequence of tasks is time-bound and stakeholders keenly look forward to this

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\(^6\) Both United Nations institutions have alternative livelihoods programmes, but their discussion is beyond the scope of this thematic evaluation.

\(^7\) According to UNDP (2004) poverty is ‘a multidimensional problem that includes inequalities in access to productive assets and social services; poor health, education and nutrition status; weak social protection systems; vulnerability to macro- and micro-level risks; human displacement; gender inequities and political marginalisation. Afghanistan; National Human Development Report: Security with a Human Face: Challenges and Responsibilities, p. 4.

\(^8\) A comprehensive assessment of the opium poppy industry in Afghanistan can be found in Chawla et al (2003), Opium economy in Afghanistan, an international problem, UNODC; World Bank (2005), Understanding and responding to the drug economy. In: Afghanistan – State Building, Sustaining Growth, and Reducing Poverty, Washington, D.C., pp. 111-130; and Buddenberg and Byrd (2006), Afghanistan’s drug industry. UNODC and World Bank, Vienna.
information. Because of the timely delivery of the Illicit Crop Monitoring Programme products, the programme has established its national and international credibility with an annual cost of about US$ 2 million. There is hardly any other project in UNODC which has such outputs with this cost efficiency.

12. Since 2003 the opium cultivation in Afghanistan has varied between 3 and 4 per cent of the cropped area but there is intra-annual fluctuation of poppy cultivation due to various socio-economic factors. The satellite-based frame sampling technique developed since 2002 has been to assess area with acceptable accuracy (85 and 95 per cent in 2006 and 2007, respectively). The method has also reduced dependency to obtain ground data and time taken for the survey. Although the crop growth period is 5-6 months, the window of time to ‘capture’ the crop at the stage which contributes to the opium survey through Satellite Remote Sensing is only 3-4 weeks. The Illicit Crop Monitoring Programme has been able to develop arrangements with the satellite data providers by planning acquisition in the specific time windows based on region-specific crop phenology.

13. There have been visible efforts in capacity development of the Ministry of Counter Narcotics personnel since November 2005 towards the devolution of the Illicit Crop Monitoring Programme to the Ministry of Counter Narcotics. The Illicit Crop Monitoring Programme has also been able to establish a network of surveyors at national and provincial level.

14. The Illicit Crop Monitoring Programme results are efficiently delivered because of a well designed operational plan. Its execution and monitoring was implemented by UNDCP Pakistan from 1994 to 1998 and by UNODC Vienna from 1999 to 2002. A full time International Project Coordinator was appointed at the Country Office in Afghanistan, Kabul, in 2003, responsible for planning and execution; however, analysis and reporting was done at UNODC, Vienna. Since December 2004 the analysis and reporting is being implemented by the Country Office in Afghanistan with the exception of the opium value chain analysis. The remote sensing component introduced in 2002 was the responsibility of the Research and Analysis Section, Vienna, with the help of international remote sensing experts. Starting in 2005 the remote sensing component was also undertaken by the Country Office in Afghanistan Kabul. Since December 2005 all the field survey components have been transferred to the Ministry of Counter Narcotics. A Data Entry Unit has been created in the Ministry of Counter Narcotics for organizing and maintaining databases. Since 2007 the entire remote sensing component is implemented by Afghan nationals (Ministry of Counter Narcotics/UNODC) under the supervision of international experts. The schedule, responsibilities of the UNODC and the Ministry of Counter Narcotics, and the estimated level of effort is provided in Annex IV, Table1.

C. Effectiveness

1. Attainment of objectives

15. The information generated under Illicit Crop Monitoring Programme is widely considered as the only source of reliable, transparent and credible information delivered timely by an international body like UNODC. This information has been available to key stakeholders for counter narcotics operations. The Illicit Crop
Monitoring Programme has been able to build capacity in the highly technical areas such as Satellite Remote Sensing, GIS and Global Positioning System (GPS)/field surveys in the Country Office in Afghanistan, survey design and implementation of extensive socio-economic village surveys, and has initiated the expansion of this capacity to the national counterpart Survey and Monitoring Directorate of the Ministry of Counter Narcotics in 2005 (Annex I, Fig. 3).

• The Illicit Crop Monitoring Programme has implemented methodologies for illicit crop cultivation and yield assessment with the participation of the Ministry of Counter Narcotics. It uses state-of-the-art technologies, such as Satellite Remote Sensing, GIS and GPS for generating the crop hectarage and production estimates using a frame sampling method.

• UNODC has conducted surveys to identify socio-economic drivers of poppy cultivation. It has collected data on crop calendar, opium dependency and opium price in different regions, and opium varieties and diseases. These surveys provide the crop area estimates for poppy cultivation for which there are no satellite images. Opium price information among producers and traders has permitted the characterisation of the opium value chain and estimation of the total value of the opium economy when the information is integrated with area and yields of opium poppy.

In the recent past, to increase the risk of association with poppy cultivation, governor-led eradication is carried since 2005 with the presence of eradication verifiers from the Illicit Crop Monitoring Programme. This has resulted in pressure on the field staff. The verification is only possible with physical checks; therefore, could be liable to undue influence.

2. Achievement of programme/project results and outputs
(a) Opium Winter Rapid Assessment Survey

16. This rapid assessment was initiated in 2001 with a sample of 2,770 villages in 7 districts to obtain an early estimate of the extent of poppy cultivation for the next growing season in the main opium growing provinces, to assess the degree of implementation of the opium ban by the Taliban authorities, and to determine the optimal use of available human and financial resources for the Annual Opium Poppy Survey. In 2002 the number of villages surveyed decreased to 208 in 5 provinces and in 2003 to 126 villages. Since 2002 the information gathered in the Opium Winter Rapid Assessment Survey is used to select the required satellite images to be acquired for the Annual Opium Poppy Survey. Semi-structured interviews were implemented with the headmen in 2005 in most of the villages where the 2004 Opium Winter Rapid Assessment Survey was implemented. Starting in 2005 the Opium Winter Rapid Assessment Survey uses altitudinal stratification (below 1500m, between 1500m and 2500m and above 2500m) with a sampling ratio of 1.5 per cent of the villages registered by the Afghanistan Information Management Service. In 2007 the number of villages sampled was 507, or one third of the villages sampled in Annual Opium Poppy Survey (see below). Among the topics included in the questionnaire for the headman are village demographic information and number of families growing poppy, availability of credit for poppy cultivation, reasons for growing or not growing poppy, current and past cultivation practices, land intensification, crop prices, income and expenditure by crop, phenology for
poppy and wheat, eradication measures in the village, assistance received in different sectors and security. The number of surveyors and coverage of the Opium Winter Rapid Assessment Survey is summarized in Annex IV, Table 2.

**Findings**

17. This rapid assessment has proven to be an effective step for the acquisition of relevant satellite imagery and the determination of the possible areas where farmers will cultivate opium poppy. The stakeholders find the rapid assessment results very useful, especially in developing counter narcotic measures and plans for eradication.

(b) **Annual Opium Poppy Survey**

*Area survey*

18. Satellite Remote Sensing has been used to prepare the agriculture land use map of selected provinces using medium resolution data (Landsat ETM 15 meters) between 2002 and 2005 and for all provinces starting in 2006 (Annex V, Fig. 1).

19. Since 2002, the frame sampling method has been utilized to distribute a 10x10 km grid in the agricultural land covering approximately 15 per cent of agricultural area (before 2006 the arable land map has been taken from the land cover map of FAO) (Annex V, Fig. 2). Within the sample frame a segment of 250x250 m is selected for field level mapping using ground truth evidence by the field surveyors (Annex V, Fig. 3). The sampling design enables proportionate opium crop area estimates from the frame segment to sample frame and finally up-scale to provincial level estimates. The mean area of the sampling frames within provinces is iterated to estimate the variance at national level using the bootstrap method. This standardized process has been a major contribution of the project. During the last six years the programme has improved the methodology for area survey. Having fine-tuned this methodology it is advisable to keep it constant to ensure long-term comparability of results.

20. The interpretation of satellite images (in selected provinces) between 2002 and 2006 was done using the supervised classification technique. In 2007, the Illicit Crop Monitoring Programme changed to the visual interpretation technique (Annex V, Fig. 4). Poppy cultivation has different associations in different physiographic regions and their separability is largely controlled by contextual information. Hence, the technique adopted is appropriate and should continue on regular basis for future surveys. This will also enable use of internal capacity of the Ministry of Counter Narcotics for participating in the interpretation of satellite images (Annex V, Fig. 5).

21. The spatial and non-spatial datasets since 2005 are stored in a centralized server and the spatial information can be accessed seamlessly across the grid size in different scales. Non-spatial data is also archived efficiently in MS Access database with key identifiers. Tabular information consists of tag identifications, GPS points, ground truth, and field photographs. The socio-economic data and survey results are stored as separate files in MS Access and MS Excel and are analysed separately by linking the spatial database. Datasets prior to 2005 are unstructured in the

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9 The inclusion of wheat phenology complements the knowledge of the opium poppy agricultural cycle and enhances the understanding of farmers’ food security and livelihoods in the villages.
centralized server. The national spatial framework grid and projection information are available with the Illicit Crop Monitoring Programme team. The remote sensing and GIS team has been trained recently (October 2007) to organize the entire spatial and non-spatial data in a Geo-data model. For provinces where the incidence of opium poppy cultivation is not very high and for which the satellite imagery is not acquired, the hectarage cultivated with opium is still estimated using village survey data.

**Yield survey**

22. The yield survey is carried out from the first week of April to the last week of June (with variations across the six regions). The time window for the yield survey is 4 weeks in the different locations in the regions. The first cycle of the yield survey starts in southern and eastern regions followed by western, northern and north east regions. The 250 randomly selected sample frames are used to estimate the volume of poppy capsule and the density of capsule bearing plants in 3 plots of 1x1 m. Yield equations developed by UNODC for South-west Asia and adapted to Afghanistan are used to calculate dry opium yield per hectare. The production is estimated for each province based on the area under opium cultivation and dry opium yield per hectare. Since 2006, in each sample frame three fields are selected based on quality of the opium crop (good, medium and poor). This is an improvement to incorporate the field level variability due to site conditions and cultural practices. This approach has been an enhancement to the previous method for yield estimates based on the village survey.

**Village survey**

23. The Annual Opium Poppy Survey carried out by UNDCP’s Illicit Crop Monitoring Programme from 1994 to 2001 and by UNODC’s Illicit Crop Monitoring Programme since 2002 have gathered data on the extent of opium cultivation altogether with socio-economic indicators, such as village demography, availability of schools and other public services, and the presence of development projects in the village. The lack of population census in Afghanistan has limited the selection of village samples, but the list of villages from Afghanistan Information Management Service has been used (30,700 in 2003-2005 and 31,220 since 2006) to

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10 Central region (Parwan, Paktya, Wardak, Khost, Kabul, Logar, Ghazni, Paktika and Panjshir Provinces); Eastern region (Nangarhar, Kunar, Laghman, Nuristan and Kapisa Provinces); North-eastern region (Badakhshan, Takhar and Kunduz Provinces); Northern region (Bamyan, Jawzjan, Sari Pul, Baghlan, Faryab, Balkh and Samangan Provinces); Southern region (Hilmand, Uruzgan, Kandahar, Zabul and Day Kundi Provinces) and Western region (Ghor, Farah, Nimroz and Badghis Provinces).


12 The areas under agriculture and under opium cultivation are summed for all IKONOS satellite-images in the sample within a province, the percentage of opium area is estimated and extrapolated to the provincial area. The total area under agriculture is calculated from the agriculture map prepared using Landsat data.

13 However, yield estimates could be refined; there have been several crop failures in Ghor but Illicit Crop Monitoring Programme systematically over-predicted provincial yields.
draw the stratified random sample according to the production potential and altitude. The number of surveyors and coverage of Annual Opium Poppy Survey are shown in Annex IV, Table 3. A considerable number of questions were included in 2007 to assess the effect of eradication in the village, farmers’ reaction to eradication, including possible negotiations to avoid eradication or postpone eradication. The socio-economic information included in the Annual Opium Poppy Survey is collected with village and farmers’ surveys.

24. In 1994, 2,100 villages were visited in 8 provinces. The number of villages included has varied from 171 in 2002 (after the Taliban opium ban in 2001) to 7,541 in 2000 (prior to the Taliban opium ban). In 2006 and 2007 the number of villages sampled has been about 1,500. The village questionnaires were included in the reports up to 2000. In 2000, statistical analyses included correlations and tests for normality.

25. Starting in 2002 the villages within a province were sampled randomly according to a production potential stratification within districts (high and low potential). In 2003, the villages were sampled according to three altitudinal strata, with a sampling ratio of 5-6 per cent per stratum per province. In 2007, because in some cases there was a stratum in a specific province where poppy cultivation was low or negligible, the villages sampled were redistributed to include poppy growers. After the redistribution, the total number of villages was decreased by 5 per cent, the number of villages below 1500 m increased by 13 per cent, the number of villages between 1500 and 2500 m increased by 4 per cent, and the number of villages above 2500 m decreased by 38 per cent. At the provincial level, the number of villages sampled decreased as much as 60 per cent in Ghazni and increased as much as 159 per cent in Nuristan. Details of this procedure are presented in Annex VI, Tables 1 and 2.

26. The headman of the village provides information about total cultivated area, total population and number of households. The assessment of the village agricultural situation by the surveyor (area planted to different crops and yield prognosis) is also included in the survey. The number of questions in the survey has increased in 2007 compared to previous years, mainly aiming to determine the effect of eradication and the availability of public services.

27. The village survey provides two key figures for the assessment of the importance of poppy cultivation nationwide. One is the area cultivated with poppy for those districts for which there was no available satellite imagery (3-10 per cent of the total area under poppy cultivation) and the other is the estimation of the number of farmers or households involved in poppy agriculture.

28. Parametric procedures for area estimates under poppy cultivation from satellite imagery and from the village survey (for areas without satellite imagery) were used up to 2003. Starting in 2004, the 90% confidence interval for poppy growing areas and the number of farmers growing opium is estimated with the bootstrap method. This change was suggested by researchers from Cranfield University in the United Kingdom to improve the variance estimates of the areas planted with poppy.
Findings

29. The number of villages has varied from 171 to 7,500 depending on the extent of opium cultivation (largely affected by the opium cultivation ban in 2001) but also as a function of the number of farmers interviewed per village, including the headman (sometimes only the headman was interviewed in the village or the headman and two additional farmers, see section on farmers’ surveys). The sampling has focused more on village representation rather than household representation within the village.

30. The benefit of redistributing the sample at the end of the stratified random sampling procedure has not been discussed or included as an integral part of the survey methodology. This has had an effect in the implementation of the survey, but its statistical outcomes are unknown.

31. Based on the estimate of the number of households growing opium poppy (509,000) the percentage of Afghan rural settled population involved in poppy cultivation is 18.7 per cent, almost one out of five people. Currently, a combination of parametric and iterative methods is used to estimate confidence intervals. However, the majority of the staff in Illicit Crop Monitoring Programme Kabul still requires more training in the statistical methods used for the Annual Opium Poppy Survey reporting.

32. The questionnaire for this survey lacks relevant items with respect to opium poppy agriculture like Opium budgets including revenues, fixed and variable costs; thus, comparisons between opium and licit crops continues to be limited to gross returns.

33. The size of the questionnaire seems to be an issue among some surveyors. It is felt that the number and nature of the questions is such that the time required to complete the questionnaires is high in relation to the total time allocated to survey implementation.

Farmers’ surveys (poppy growing and non-poppy-growing farmers)

34. The socio-economic survey has been implemented under the same stratified random sample used for the village survey, with two farmers interviewed. The questionnaire includes the working status of the farmer (landowner, tenant or sharecropper), origin, area cultivated by crop in the present and past year, reasons for growing or not growing poppy, eradication in farmer’s fields, eradication negotiations and role of the headman in those negotiations, implementers of eradication, problems during and after eradication, opium grown and sold in the last year, number of years growing poppy, outstanding loans, farmer income and

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14 Using the estimate of 22,575,900 people for the rural settled population (Central Statistics Office, 2007) and assuming that each household has 6.5 family members. In 2003 the number of poppy growing households was estimated at 264,000 and the price of dry opium at farm gate at harvest time was US$ 425 per kg. In 2007 the price of dry opium, weighted by production, was US$ 122 per kg. In spite of the declining opium prices, more agricultural land and households are being integrated into the opium economy.

15 The bootstrap software (Resampling Stats., version 5.0) was made available to the evaluation team from the regional Illicit Crop Monitoring Programme Tashkent office to compare confidence intervals estimated by the iterative and parametric methods, but time did not allow these comparisons as part of the Illicit Crop Monitoring Programme self-assessment.
expenditure by crop, income as labourer, salary, remittances, household expenditures in consumables and capital items, household assets, and number and type of livestock.

Findings

35. Originally, the survey was meant to collect information equally from non-poppy farmers and poppy farmers. However, the proportion of farmers growing poppy varies from year to year: for example, in 2007 only one fourth (724) of the total number of farmers interviewed (2,999) was growing poppy.

36. The farmers’ questionnaire is more detailed than the headman’s questionnaire and the questionnaire for the poppy growing farmers is longer than that for the non-poppoppy-growing farmers. The number of questions in the survey has increased in 2003 compared to 2002 and increased again in 2007 compared to 2006. The inclusion of eradication questions is very apparent. The size of the questionnaire has become an issue for surveyors towards a timely completion of a large number of questionnaires during the survey campaign, which requires a strict time line for implementation. Currently, the two questionnaires may take between one day to one day and a half per surveyor.

37. Altitudinal stratification is not used to report results. Rather, reporting has been done covering regions that comprise 3-7 provinces because this is relevant for the provincial governors.

38. The selection of the two farmers in the village is done upon suggestion by the headman or ‘randomly’ by the surveyor. Two farmers interviewed per village cannot represent the variability of households with respect to family size, land or other assets for both poppy and non-poppoppy-growing farmers. Because of the way the farmers are selected, it is likely that the two farmers represent above average conditions (similar to the headman’s condition) The current process of farmers selection (one poppy growing and one non-poppoppy-growing farmer) poses questions about the validity of the information to represent landless farmers or those owning very small plots of agricultural land. However, the Illicit Crop Monitoring Programme team argued that there is no bias in the current selection process.16 National socio-economic household surveys in Afghanistan have relied on wealth groups within the villages (Ministry of Rural Rehabilitation and Development, 2003) or clusters of eight to twelve households within the villages (Ministry of Rural Rehabilitation and Development, 2005 and 2007) to capture the differences amongst households within villages.17

39. The evaluation team found three versions on how the data is collected by the surveyors: memorisation of questions and responses, taking notes in a notebook where the questionnaire was written to guide the interview, and filling the questionnaire forms directly in the presence of the farmer. Thus, it is difficult to ensure standards for quality of information obtained and filled in the questionnaire

forms that eventually are entered in databases. The quality and proportion of questionnaires filled with each method is unknown.

40. In some cases the sample size of poppy farmers was too small to allow statistical conclusion (Central, North-Eastern and Northern regions with 18, 62 and 46 observations, respectively). Survey data, in their present form, require time-consuming manipulation from MS Access to MS Excel prior to any statistical test. The data analysts’ ability to export data for verification has proven to be limited. Analysis of household income and distribution among poppy growing and non-poppoy-growing farmers carried out by the Illicit Crop Monitoring Programme Kabul team and the evaluation team showed that the Illicit Crop Monitoring Programme team has the capacity to prepare data for further statistical tests using spreadsheets (Annex VII, Tables 1-4, including comments about questionnaire design in Box 1). However, a proper statistical package is lacking for the systematic analysis of data gathered to date.

41. Users of socio-economic results from the Annual Opium Poppy Survey reports are few. Search for this evidence in documents from organizations operating in rural development and alternative livelihoods in Afghanistan, and interviews with stakeholders revealed a low demand for this information in its present form. Some socioeconomic findings have been raised to policy statements in the Preface of Annual Opium Poppy Survey (the most prominent being, ‘opium cultivation in Afghanistan is no longer associated with poverty – quite the opposite’) and have been refuted by some leading experts on Afghanistan. Other stakeholders interviewed are aware of the weakness of the data and/or the arguments in the policy arena. As mentioned above, due to methodological issues, caution is required to use information derived from the farmers’ surveys.

42. There is horizontal communication about the findings of the Illicit Crop Monitoring Programme with the Drug Demand Reduction Programme of UNODC in Afghanistan. The latter uses information from the Opium Winter Rapid Assessment Survey and the Annual Opium Poppy Survey to update their information about prevalence of drug addiction in rural environments.

(c) Price monitoring and value chain analysis

43. Since January 1997 monthly prices of dry opium have been collected from traders in selected parts of Nangarhar and Kandahar. Since November 2002 monthly prices of fresh and dry opium are collected from farmers and traders in Helmand, Kandahar and Nangarhar provinces; since May 2005, in Badakhshan, Balkh and Hirat provinces; and since January 2006 in Farah, Faryab, Ghor, Kunduz and Takhar provinces. About 180-200 farmers and 170-190 local traders are interviewed every

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18 In 2006 the Alternative Livelihood Programme of FAO commissioned Illicit Crop Monitoring Programme to prepare two studies using Annual Opium Poppy Survey data; AALP/UNODC Village Survey in Hirat Province. Case Study 1, GCP/AFG/036/UK, FAO, Kabul, and AALP/UNODC Village Survey in Balkh Province. Case Study 2, GCP/AFG/036/UK, FAO.
month. Since 2004, there is a comprehensive set of activities on market intelligence and price monitoring that allow a description and update of the opium value chain.

Findings

44. The Illicit Crop Monitoring Programme is endowed with experienced surveyors who gather price information systematically. Means and number of observations are reported for districts and provinces, including bi-weekly price reports for Helmand, Kandahar and Nangarhar provinces. Monthly prices of heroin and Cannabis resin are also collected and reported. A major thrust for the characterisation and quantification of the opium value chain was reported in 2004, identifying transformation processes (from opium to heroin and morphine), actors and leakages, trading patterns, ports of export and value of exports in cities of neighbouring countries. The total value of the opium economy is reported in the Annual Opium Poppy Survey. This is the last and most important valuation of the entire programme, essential for tracking the opium economy and calculation of economic multipliers.20

45. UNODC and the World Bank jointly produced a report in December 200621 with a comprehensive analysis of prices and market interaction using data up to February 2006.22 A key publication in this report was the contribution of the International Monetary Fund on the macroeconomic impact of the drug economy and counter-narcotics efforts using figures collected by the Illicit Crop Monitoring Programme since 1995.23 The joint report was the most frequent downloaded 2006-publication in the South Asia Division of the World Bank.

46. There are mixed opinions about whether the Illicit Crop Monitoring Programme staff in Kabul should do research and write about policy implications. Some think that the Illicit Crop Monitoring Programme is a service provider (data, monitoring and capacity development) and others believe that, in addition to the provision of services, there is latitude for conducting research and get involved in policy analysis. The evaluation team realizes that in one hand there would be a high cost to increase the know-how in the Illicit Crop Monitoring Programme Kabul team to carry out research and on the other hand there is need to lift their know-how on data gathering, quantification and interpretation of results.

(d) Eradication Verification Survey

47. Upon request of the Ministry of Counter Narcotics and donors eradication verification was carried out in 2005 using GPS points and high resolution satellite images collected for cultivation estimations under frame sampling design. Eradication is planned by the Ministry of Counter Narcotics and donors based on the rapid assessment and intelligence inputs; however, governor-led eradication

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does not necessarily follow the plan. Since 2005 governor-led eradication has been physically verified for all the eradicated fields using field measurements and further validation was done using high resolution satellite images collected for cultivation estimation under frame sampling method (Annex VIII, Figs. 1 and 2). Through the evaluation process it is evident that area estimation may be, at times, incorrectly reported by the field staff (Annex VIII, Figs. 3 and 4). There are two approaches for eradication verification: 1) physical measurements of all eradicated fields using a pacing technique and collection of GPS points at the centre of each field and 2) validation of field-based data using satellite images obtained for the area survey if the image is available for that period.

48. There are several issues related to eradication verification:

- Eradication verification needs to be carried out during December to June. During this period field surveyors are also supposed to carry out the annual opium survey. This puts pressure or stress on the existing survey team. Eradication verification needs 100 per cent physical check and the use of Satellite Remote Sensing data (in the identified frame samples) does not allow obtaining the verification information required.

- Area calculation is to be physically done using GPS and is liable to correction and inaccurate reporting. Long-term stay in the field for accurate area calculation is risky for the eradication verifiers, the assessment is subjective and the reporting is dependent on the verifier’s integrity.

- The re-growth of opium crop after eradication depends upon the technique used for eradication. Presently there is no method to quantify revival of crop after eradication. Satellite data used for validation of field reports is incidental because the acquisition of data is not planned for eradication verification. Satellite-based methods for eradication verification are expensive (as pre and post eradication coverage will be required) and have interpretation inaccuracies due to signature overlap with fallow or harvested fields.

- The visibility of verifiers associated with UNODC along with the eradication forces creates a political cost.

(e) Capacity development

49. The Illicit Crop Monitoring Programme’s effort to build capacity at the Ministry of Counter Narcotics has partially met the objectives to establish national monitoring systems for opium poppy. However, there is no structured scheme stating quantitative and qualitative indicators to assess the degree of devolution of the Illicit Crop Monitoring Programme to the Ministry of Counter Narcotics. This devolution is clouded by the implementation of the Priority Reform and Restructuring; which could determine a decrease by 50 to 80 per cent in the salaries of some qualified personnel. This is a major disincentive for qualified staff to continue working with the Ministry of Counter Narcotics. Considering these

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24 This activity is further elaborated in section 3.3.2
25 The PRR is a demand-led process under the Afghanistan Independent Administrative Reform and Civil Service Commission to restructure civil service, establish clear lines of responsibility, merit-based recruitment and new pay scales. This is a reform supported by the International Monetary Fund (IMF) and bilateral donors.
factors it is unlikely that the intended devolution of the Illicit Crop Monitoring Programme to the Ministry of Counter Narcotics will take place by 2010.

3. Implementation

(a) Monitoring and backstopping

50. The Research and Analysis Section in Vienna and Tashkent are responsible for technical supervision of the programme. The programme management office supports procurement of satellite data and ensures funding for the programme. A scientific advisory committee consisting of technical experts from UNODC, United States narcotic crop monitoring experts, and Cranfield University meets three times annually for technical assessment. The Regional Monitoring Expert from UNODC for Central Asia, based in Tashkent, provides technical supervision on the illicit crop monitoring in Afghanistan (AFG/F98 project). Day to day project implementation is monitored by the International Project Coordinator since 2004.

51. The Country Office in Afghanistan provides administrative support to the Illicit Crop Monitoring Programme project and to the International Project Coordinator. The technical supervision is provided by the Regional Monitoring Expert from Tashkent for quality checks, statistical analysis and validation. This Expert is supported by the programme management team and experts in the headquarters of the Illicit Crop Monitoring Programme in Vienna. The support includes lobbying with donors and proposal writing, procurement of satellite data, scheduling of reviews and scientific advisory meetings, opium value chain analysis and other technical inputs, quality control, and briefings to the Executive Director of UNODC.

(b) Institutional and management arrangements

52. The International Project Coordinator along with the Illicit Crop Monitoring Programme Kabul staff, plans, executes, analyses and reports the project activities since 2004. He reports to the Regional Monitoring Expert in Tashkent and to the Country Office in Afghanistan. He is supported by the National Programme Officer, a Data Analyst, Remote Sensing Analysts, Eradication Reporters and Survey Coordinators at UNODC Country Office in Afghanistan. Within the Ministry of Counter Narcotics, the Survey and Monitoring Directorate is solely responsible for executing the national programme of the Illicit Crop Monitoring Programme. The Director of Survey and Monitoring Directorate is the national counterpart of National Programme Officer. He is supported by a core team of 8 persons at the Ministry of Counter Narcotics Kabul and 6 Survey Coordinators at regional headquarters.

III. Outcomes, impacts and sustainability

A. Outcomes

1. Overall

53. There are three general outcomes of the Illicit Crop Monitoring Programme: 1) the opium surveys have raised public awareness nationally and internationally, and promoted governmental and intergovernmental actions to address illicit drug
economy concerns; 2) the programme helped develop robust methodologies for estimating opium crop area, yield and price, and made a meaningful contribution in preparing the World Drug Report; and 3) the programme contributed in building the capacity of the Ministry of Counter Narcotics in order to carry out future surveys by the Government of Afghanistan.

2. **Opium Winter Rapid Assessment Survey**

54. The Opium Winter Rapid Assessment Survey has been implemented since 2001 to ascertain farmers’ intentions for cultivation of opium poppy and has been very helpful to determine the needs for the acquisition of satellite imagery. The reporting was shifted forward, from March to mid-January, to allow the formulation of eradication actions by different stakeholders and to help the implementation of the Annual Opium Poppy Survey.

3. **Annual Opium Poppy Survey**

   **Crop area survey**

55. The crop area estimates were dependent on the questions asked in the village survey from 1994-2001. Since 2002, satellite survey was introduced for cultivation estimations using high resolution images in selected provinces. Since 2003, the agriculture mask is being used to distribute the sample frames. Afghanistan has 12 per cent of its area under agriculture land use. Out of this around 3 per cent is cultivated with opium poppy. The net sown area varies with the agro-climatic situation and local socio-political environment and the cultivation practices vary with the availability of irrigation. If capturing intra-annual variation is deemed important it would be necessary to have a long-term net sown area maps using satellite images of approximately 20m spatial resolution to identify the cropped areas, short fallow and long fallow areas. While distributing the frame samples the weights could be provided on the strata with intensive cultivation.

   **Yield survey**

56. UNODC’s efforts to develop yield equations for the South-East and South-west Asia brought a major improvement in the crop production estimates in 2001. The robustness of the system has been further strengthened by carrying out ground survey in the sample segments based on the quality of the crop. In addition, the equation was tested and adapted to the conditions in Afghanistan in 2003. However, these estimates are insensitive to the climatic vagaries like frost and drought situation.

   **Village survey and farmers’ surveys**

57. These surveys have been implemented widely for 14 years to gather information about the number of households involved in opium poppy cultivation out of the total number of households in the villages, areas allocated to opium and other crops and expected yields. The interviewee is the village headman, but the observations of the surveyor (assessing the area and yields) are also included in this survey. This information constitutes the agricultural pillar for the Annual Opium Poppy Survey assessment. The farmers’ surveys, which complement the information gathered from the headman has helped the programme to understand some of the
factors involved in the decision to grow or not to grow opium. In the late 1990s, through a series of special studies, the programme was able to articulate the contextual socio-economic situations associated with farmers’ attitudes in selected locations. During the last five years after the Taliban regime had almost eliminated opium cultivation, the programme has continued its efforts to understand farmers’ motives to grow opium with recent emphasis in attempting to understand farmers’ responses to eradication interventions. However, distillation of these findings remains to be documented and published.

4. Eradication Verification Survey

58. Eradication of opium is carried out by the provincial governors and the Poppy Eradication Force (formerly, Afghan Eradication Force) from December to June. Eradication efforts became more prominent since 2005. To date, the Ministry of Counter Narcotics-UNODC verified only Governor-led eradication and figures of the Poppy Eradication Force-led eradication are reported in the Annual Opium Poppy Survey without verification. Opium eradication campaigns have an effect on poppy growers in the sense that they weight the likelihood of having their fields eradicated. The effect of eradication verification to administer the Good Performance Initiative, Counter Narcotics Trust Fund, other programmes or its effect towards a sound counter narcotic policy design remains unknown.

5. Opium price monitoring and value chain analysis

59. The price of fresh and dry opium at the farm gate or with the traders at harvest, as well as the monthly and biweekly price collection has been used to describe and analyse the market integration and to estimate the total value of opium and heroin produced in Afghanistan. This valuation, with different degrees of refinement has been published for the last 14 years. Starting in 2004, a value chain analysis methodology was described to set the stage for another facet of research with the Illicit Crop Monitoring Programme beyond the farm; that is, investigating the lion’s share of the opium economy. Opium poppy processors, traders and traffickers, and exporters operate in a sea of counter narcotic agents subject to corruption, assuming high risks but also expecting high prices for opiates exported. The methodology used by the Illicit Crop Monitoring Programme has made a meaningful contribution to the World Drug Report since 2005.

26 The Counter Narcotics Trust Fund was established by the United Nations Development Programme (UNDP) and key stakeholders to support development projects aimed to discourage poppy cultivation; and the Good Performance Initiative was introduced by the US Government to reward the poppy free/good performing provinces.

27 There is no documentation available assessing the effect of eradication verification. There are however, figures of yearly eradication and area cultivated with opium, as reported in Annual Opium Poppy Survey – 5000, 15,300 and 19,047 ha eradicated in 2005, 2006 and 2007, respectively, and 104,000, 165,000 and 193,000 ha with net opium cultivation (after eradication) for the corresponding years.

6. Capacity development

60. Capacity development is a cross-cutting activity that can be treated as part of the long-term existence of the programme. As such, it is elaborated in section 3.3.2 below.

B. Impact

61. UNODC’s efforts to gather information about the extent of opium agriculture and production, and the opium economy have evolved from an initiative between the Government of Afghanistan and UNODC to an endeavour in which several countries and UNODC are involved. The information generated as an international initiative has higher credibility, transparency and reliability. Everybody wants this information and nobody wants to bear the cost with the exception of UNODC, as such, the Illicit Crop Monitoring Programme products are international public goods. The information and analysis generated under different Illicit Crop Monitoring Programme products are widely used. The economic and counter narcotics policies of the Government of Afghanistan and key multilateral and bilateral stakeholders are fed with this information:

- The National Drug Control Strategy, which is an important component of Afghan National Development Strategy.
- The International Monetary Fund, the World Bank and the Asian Development Bank use the information to assess fiscal, economic and development policies.
- The Government’s poppy eradication programme depends on this information and the UNODC’s eradication verification helps to assess the credibility of such programme.

62. The Government of Afghanistan has created the Ministry of Counter Narcotics with the overall objective of addressing issues related to counter narcotics. Since 2005 the Illicit Crop Monitoring Programme is being implemented jointly by the Ministry of Counter Narcotics and UNODC to develop local capacity. Thus, the capacity development efforts of UNODC have brought the Ministry of Counter Narcotics as an active player to gather and interpret information on counter narcotics issues, which are used by policy makers.

C. Sustainability

1. Duration

63. The Illicit Crop Monitoring Programme products are highly appreciated by the Government of Afghanistan and the international community without signs of financial restrictions to support its activities.\(^{29}\) The Illicit Crop Monitoring Programme has evolved from an initiative between the Government of Afghanistan and UNODC to an endeavour in which several countries and UNODC are involved. The information generated as an international initiative has higher credibility, transparency and reliability. Everybody wants this information and nobody wants to bear the cost with the exception of UNODC, as such, the Illicit Crop Monitoring Programme products are international public goods. The information and analysis generated under different Illicit Crop Monitoring Programme products are widely used. The economic and counter narcotics policies of the Government of Afghanistan and key multilateral and bilateral stakeholders are fed with this information:

\(^{29}\) Since 2005, with the inclusion of eradication verification in the portfolio of the Illicit Crop Monitoring Programme (project I-39 added to project F-98), there has been an increasing trend in demand to deliver what the Ministry of Counter Narcotics and donors want. The Illicit Crop Monitoring Programme agenda, and time management, appears to be increasingly influenced by the eradication policy; with UNODC contributing to develop Ministry of Counter Narcotics capacity to carry out eradication verification. The trade-off between the time devoted to weekly
Programme has carried out its mandate for 14 years under very fluctuating and dangerous conditions. It has shown flexibility and resilience to adapt to the ever changing environment, delivering high quality international public goods at low cost and to achieve that the Illicit Crop Monitoring Programme has relied on national staff mentored by international advisors.

2. Capacity development

64. The increasing number of households dependent on opium agriculture and an opium industry that generates more than one half of the licit GDP\textsuperscript{30} called for the creation of the Ministry of Counter Narcotics in December 2004. The Ministry of Counter Narcotics was formed to institutionalize the Counter Narcotics policy at the national scale and since December 2005 UNODC and the Ministry of Counter Narcotics have signed a Memorandum of Understanding to implement the Illicit Crop Monitoring Programme. A key objective of the Illicit Crop Monitoring Programme in Afghanistan is to strengthen the capacity of the government to monitor and analyse illicit crop cultivation and estimate production data with the aim to develop appropriate drug control policies. Annually, UNODC and the Ministry of Counter Narcotics jointly implement the Illicit Crop Monitoring Programme with a Letter of Agreement based on the Annual Resource Plan. Since 2005, the Illicit Crop Monitoring Programme embraced an ambitious programme on capacity building for the Ministry of Counter Narcotics aimed to hand over most of the responsibilities of crop monitoring to the Ministry of Counter Narcotics by 2010 with minor supervision by UNODC. The institutional set up between UNODC and the Ministry of Counter Narcotics is depicted in Annex1, Fig. 4. Several topics have been addressed in the capacity development program to empower the Ministry of Counter Narcotics staff between January 2005 and May 2006. Since June 2006 there are ongoing training activities in remote sensing, GIS, data interpretation, computer literacy and survey techniques, project management and English report writing.\textsuperscript{31} Starting with the Opium Winter Rapid Assessment Survey 2006, both the Ministry of Counter Narcotics and Illicit Crop Monitoring Programme Kabul have shared responsibilities in data processing and interpretation.

Findings

65. Capacity development activities for 2008 to 2011 are included in the Update on Capacity Building Activities in Afghanistan of February 2007, but there are no quantitative or qualitative indicators of the progress to be achieved by the Ministry of Counter Narcotics personnel holding key positions at different activities. A structured scheme for capacity development is missing.

and bi-weekly eradication verification reports and other activities such as the Opium Winter Rapid Assessment Survey and Annual Opium Poppy Survey reports, among other activities in Annex IV, Table 1, must have a toll on the Illicit Crop Monitoring Programme team. It has been mentioned above that the eradication activities have increased in the last three years and a considerable share of questions on eradication have been incorporated in the socio-economic questionnaires since 2006.

\textsuperscript{31} Update on Capacity Building Activities in Afghanistan. Illicit Crop Monitoring Programme, UNODC, Kabul, February 2007.
66. Self-assessments from the Illicit Crop Monitoring Programme team in Kabul revealed that there is need to enhance capacity in Illicit Crop Monitoring Programme for socio-economic surveys, analysis and interpretation to carry out contextualisation of findings in the Opium Winter Rapid Assessment Survey, Annual Opium Poppy Survey and Price Monitoring.

67. In 2006 the Ministry of Counter Narcotics has focused on surveying poppy cultivation, village and farmers’ practices, eradication verification and opium price monitoring. The UNODC has trained the surveyors jointly with the Ministry of Counter Narcotics and it has established a Data Entry Unit at the Ministry of Counter Narcotics where four persons were placed and trained to enter, clean, organize and analyse the field data. Two Ministry of Counter Narcotics staffers are currently trained at Illicit Crop Monitoring Programme Kabul and will be back at the Ministry of Counter Narcotics in December 2007. During 2007 Ministry of Counter Narcotics staffers in Kabul have initiated satellite image interpretation. UNODC has seconded four trained staffers at the Ministry of Counter Narcotics with necessary hardware and software.

68. There are other institutions in Afghanistan and abroad that carry out geospatial and socio-economic activities to assess project interventions in different environments. But there is little evidence of references to the work by alternative livelihoods projects or the Agro-meteorological Project of the United States Geological Survey, among others, using similar tools or methodologies. While monitoring illicit crop cultivation requires specific methods, the geospatial methods and rapid assessment techniques are widespread and should be known to both Illicit Crop Monitoring Programme Kabul and the Ministry of Counter Narcotics personnel.

69. From 2006 onwards, UNODC has also built capacity in the provinces. The regional offices, comprising 4 to 5 provinces, have survey coordinators and some basic infrastructure such as computers, Internet, and telephone and fax. Currently, there is limited capability of map/image reading, which is required for ground truth data collection. The evaluation team found that the Ministry of Counter Narcotics personnel in the provinces do not perceive themselves in the mainstream of the Illicit Crop Monitoring Programme activities.

70. Leadership has emerged slowly at the Ministry of Counter Narcotics Kabul for planning, survey implementation and monitoring for the National Opium Monitoring Program. It was evident to the evaluation team that the communication between the Illicit Crop Monitoring Programme national coordinator and the Director of Survey and Monitoring at the Ministry of Counter Narcotics is less than optimal. In contrast, the horizontal communication between the data analyst and remote sensing counterparts between Illicit Crop Monitoring Programme and the Ministry of Counter Narcotics is good. It is difficult to ascertain the progress in capacity building because there are no quantifiable indicators for individual staff and tasks to be performed at different stages in the devolution process.

32 This project supplies key agro-meteorological information to projects financed by the USAID (and possibly others) that collaborate with the Ministry of Agriculture, Animal Husbandry, the Afghan Meteorological Authority and the Ministry of Transport.
71. Low availability of qualified personnel and deficient salary structure in the federal government limit staff retention. There are major concerns that the implementation of the Priority Reform and Restructuring in public offices would create disincentives for well-trained public servants to continue working at the Ministry of Counter Narcotics. The Illicit Crop Monitoring Programme has already seen this fate with one staff, trained by the Illicit Crop Monitoring Programme in the last two years, who left the job at the Ministry of Counter Narcotics pursuing a better compensation package. Implementation of the Priority Reform and Restructuring could imply a salary reduction between 50 to 80 per cent and with little or no possibilities for UNODC to top off their salaries, as indicated by the Illicit Crop Monitoring Programme staff in Kabul.

72. While the annual capacity development activities show a generalized trend in the devolution of tasks from Illicit Crop Monitoring Programme to the Ministry of Counter Narcotics, it is difficult to steer the programme in the absence of indicators that could characterize the progressive ownership of the monitoring process by the Ministry of Counter Narcotics staff in Kabul and in the provinces. Based on the present status of technical know-how, staffing, and resources available at the Ministry of Counter Narcotics Kabul and provinces it is unlikely that the transfer of the Illicit Crop Monitoring Programme to the Ministry of Counter Narcotics will take place by 2010 as stated in the last Project Revision Document.  

D. Dissemination of information and data-sharing (cross-cutting)

73. Since 1994 the Illicit Crop Monitoring Programme has been gathering valuable information on area planted with opium poppy, yields and price information that constitute the core of the Annual Opium Poppy Survey. In addition, it has accumulated vast socio-economic information through the Opium Winter Rapid Assessment Survey, Annual Opium Poppy Survey and price monitoring efforts. These public goods have been stored in datasets.

Findings

74. There is a wealth of information collected by the Illicit Crop Monitoring Programme for the last 14 years that is not easily transferable to mainstream statistical or econometric packages. Currently, there is no explicit policy about data-sharing on opium prices or socio-economic data. While the evaluation was carried out we were told that the data is available to the public, but there is no evidence of what is the mechanism to follow to access the data.

IV. Lessons learned, best practices and constraints

A. Lessons learned

75. Opium poppy agriculture is nomadic or footloose; opium grows well in marginal conditions but its cultivation entails a high risk for farmers and traders.

33 Project Revision Document (Jan. 2002-Dec 2007), Illicit Crop Monitoring Programme in Afghanistan, UNODC.
The Illicit Crop Monitoring Programme has mastered effective sampling procedures based on rapid assessments and high-tech satellite imagery under very difficult and changing conditions in Afghanistan. It has shown effectiveness in providing area crop and production estimates in different agro-ecological conditions as well as the provision of opium prices in different markets. However, some improvement should be made to enhance the time window available to process field data required to produce the Annual Opium Poppy Survey report. While devolution of the Illicit Crop Monitoring Programme to the Ministry of Counter Narcotics is progressing, the UNODC should be prepared to continue its support to the Ministry of Counter Narcotics beyond 2011. A structured capacity development needs to be prepared with full ownership by the Ministry of Counter Narcotics staff.

76. The Illicit Crop Monitoring Programme has had a very ambitious set of activities geared toward the understanding of driving factors for opium poppy cultivation (farmers’ surveys). However, the way in which the information is gathered and processed, does not permit solid conclusions or comparisons. The socio-economic contextualisation of households in the villages does not have to rely on data gathered by Illicit Crop Monitoring Programme; rather, it should rely on nationwide household information gathered by the Central Statistics Office every two years.

B. Best practices

77. The comprehensive methodology for crop area and production estimates, and opium prices is widely accepted by the national and international communities. The set of Illicit Crop Monitoring Programme products is delivered on time for the use of different stakeholders. Some products are time sensitive and others are required for strategic policy decisions. The Illicit Crop Monitoring Programme team in Kabul has been able to take over many responsibilities from Vienna as more capacity has been built locally. The challenge for the Illicit Crop Monitoring Programme is to permeate this enhanced capacity to the Ministry of Counter Narcotics staff.

C. Constraints

78. It is a fact that the weak security situation and remoteness limits the implementation of a statistically robust design for opium crop survey and socio-economic data collection. However, there is a widespread assumption that data, information and expertise in different areas (agro-climatic data, soils and topography, or socio-economic data) is not available in Afghanistan. This assumption, perhaps valid before 2002, hampers the potential synergies with other key players and increases the risk for duplication of efforts.

79. Afghanistan has a shortage of qualified professionals to undertake remote sensing and the GIS component of the Illicit Crop Monitoring Programme, questionnaire and survey design, field survey, analysis and interpretation of data. The development of capacity requires time and financial resources and once the personnel are trained there is a risk of loosing them because other agencies offer better working conditions or incentives. There is a fierce inter-institutional competition for qualified human resources and there is uncertainty in all public
offices with regard to the implementation of the PRR. The Illicit Crop Monitoring Programme cannot do much to circumvent this situation, but dialog with other organizations and the government should continue.

80. The evaluation team did not have enough time for a detailed review of consistency and quality of data gathered in the village and farmers’ surveys prior to 2007. It was assumed that 2007 products represent a significant section in the recent life of the Illicit Crop Monitoring Programme. It was not possible to look into the details of database management in earlier years.

81. The evaluation team could not interview all intended stakeholders because of several factors unforeseen such as availability of personnel, unavailable ground transportation, limited time, security and other unavoidable constraints.

V. Recommendations

82. There are some recommendations for the Illicit Crop Monitoring Programme and UNODC staff to consider:

A. General

83. **Recommendation 1**: The crop hectarage and production estimation, as well as opium price monitoring should remain a core objective of the Illicit Crop Monitoring Programme.

B. Opium Winter Rapid Assessment Survey

84. **Recommendation 2**: The Opium Winter Rapid Assessment Survey should be continued, but the number of questions about associated crops to poppy and wheat should be decreased; similarly, the number of questions regarding the availability of public services should be decreased because this contextual information can be gathered elsewhere based on village location (i.e., Ministry of Rural Rehabilitation and Development).

C. Annual Opium Poppy Survey

1. Crop area and production

85. **Recommendation 3**: The satellite data, derived maps and non-spatial data collected from different villages should be organized in a geo-spatial domain. A geo-data model should be customized using appropriate software tools in the form of an Information Systems for Illicit Crop Monitoring. This geo-spatial database would allow long-trend and pattern analysis using geo-statistical tools, would facilitate the retrieval, visualisation and spatial analysis.

86. **Recommendation 4**: The crop hectarage estimation and production should also be available in the different altitudinal strata which is the primary criteria for sampling stratification.
87. **Recommendation 5:** The methods in the crop hectarage estimation have evolved since 2002. The Illicit Crop Monitoring Programme has reached a stage to stabilize its methodology in such a way that it is based on operationally available Satellite Remote Sensing systems and replicable by the Government of Afghanistan. The distribution of the sample cells should be based on the stratified random sampling design with probability proportional to size of the cropped area.\(^{34}\)

88. **Recommendation 6:** Because of the semi-arid and arid environment of Afghanistan, agriculture has intra-annual variations due to agro-climatic factors. Hence, the current approach to prepare an agriculture land use map from medium resolution data should be continued for 5-6 years to identify annually cropped areas, short fallow and long fallows. The sample frame distribution should be carried out as per the area proportion to the population size in above agriculture land use categories to account for the variability of intensity of cultivation.

89. **Recommendation 7:** It is proposed to organize the entire database in the form of a customized information system for quick retrieval, visualisation, quality evaluation and spatial analysis. It will also be enable to perform geo-statistical analysis on patterns and trends.

2. **Village survey**

90. **Recommendation 8:** The assessment of the redistribution of villages to capture poppy growers (as done in 2007) should be done as soon as possible to determine the benefit of such action. If a net benefit is determined, the procedure to redistribute the sample needs to be spelled out or even written in a small algorithm that could be implemented by different individuals and it should be reported as part of the methodology, explaining the merits of such procedure.

91. **Recommendation 9:** Survey results should be reported according to the altitudinal strata as well as the provincial and regions grouping different provinces. Reporting by altitudinal strata may bring some ecological interpretations worth exploring.

92. **Recommendation 10:** The size of questionnaires should be reduced to relevant items/questions only. These should include the number of households living in the village, the number of opium growing families, the area of agricultural land and the area under poppy cultivation. This will release time in the implementation of the survey and could help to increase the quality of information gathered. The Opium Winter Rapid Assessment Survey should gather information to develop opium poppy budgets (including gross revenue, fixed and variable costs) should be prepared and updated for different altitudinal strata and provinces. This information is likely to enhance comparisons between opium poppy and licit crops, and monitoring of opium usage.

93. **Recommendation 11:** Measures of dispersion should be incorporated in the analysis for selected indicators to enable data quality control and comparisons by altitudinal strata and regions comprising groups of provinces. Staff at Illicit Crop Monitoring Programme Kabul should to be trained in statistical know-how.

94. **Recommendation 12:** The Illicit Crop Monitoring Programme village survey data (headman survey in both the Opium Winter Rapid Assessment Survey and Annual Opium Poppy Survey) should be analysed with Statistical Package for the Social Sciences or an equivalent statistical package that will enable to test relevant hypotheses. Training could be provided by the Research and Analysis Section or by consultants. Promptness in tackling this issue has a high payoff to enhance the Illicit Crop Monitoring Programme’s credibility.

3. **Farmers’ surveys (poppy-growing and non-poppy-growing farmers)**

95. **Recommendation 13:** Caution is required to generalize socio-economic findings to date of the Annual Opium Poppy Survey due to limitation of data. These limitations should be known by the end-users. The surveys for poppy-growing and non-poppy-growing farmers should be continued only if the concerns regarding sampling and information-gathering instruments (paragraphs 34-41) are satisfactorily resolved and there is real demand for socio-economic information to contextualize the Illicit Crop Monitoring Programme activities (see next recommendation) if the Illicit Crop Monitoring Programme decides to continue with the farmers’ surveys, there will be an additional cost for a systematic methodological review, training of the Illicit Crop Monitoring Programme and Ministry of Counter Narcotics personnel in Kabul, and monitoring as part of capacity development.

96. **Recommendation 14:** The Illicit Crop Monitoring Programme should not duplicate efforts from other institutions such as the Central Statistics Office and the Ministry of Rural Rehabilitation and Development to gather household information; the socio-economic context of the opium survey should rely on national household surveys such as the Ministry of Rural Rehabilitation and Development implemented every other year (the socio-economic contextualisation is not time-sensitive). If there is interest in a particular issue in a specific region, province and altitudinal stratum, the Illicit Crop Monitoring Programme could consider: 1) subcontracting or partnering with a suitable institution or consultant to address specific issues using the Ministry of Rural Rehabilitation and Development public data; or 2) carrying out an in-house analysis using the Ministry of Rural Rehabilitation and Development data. This could be the beginning of a series of special studies. The Illicit Crop Monitoring Programme Kabul and the Ministry of Counter Narcotics should explore the possibility that the Ministry of Rural Rehabilitation and Development 2009 could include some key questions about opium poppy cultivation or addiction in the household surveys. It would be necessary to place a suitable request to the Central Statistics Office management. The Illicit Crop Monitoring Programme could take up specific research in selected regions of interest to develop an understanding of the factors driving opium cultivation. Regardless of whether the socio-economic contextualisation of opium-related issues is subcontracted or is done in-house, there is a need to train the Illicit Crop Monitoring Kabul and the Ministry of Counter Narcotics team to analyse and interpret what is behind the numbers.

4. **Price monitoring and value chain analysis**

97. **Recommendation 15:** The path for possible research avenues has been opened by the Illicit Crop Monitoring Programme program since 2004. It could be followed
to enrich the opium value-added analysis with high potential payoffs for counter narcotic actions and policies. However, the Illicit Crop Monitoring Programme management needs to weigh the pros and cons of carrying out research and policy analysis at the expense of provision of services by the Illicit Crop Monitoring Programme.

98. **Recommendation 16:** The Illicit Crop Monitoring Programme should strongly consider re-taking parametric statistics and econometric methods for the interpretation of socio-economic indicators, including prices. User-friendly statistical packages for time series analysis (i.e., Time Series Processor or SHAZAM, a computer package for econometric and statistical computing) can be acquired to supplement a basic package such as Statistical Package for the Social Sciences.\(^{35}\)

99. **Recommendation 17:** Special studies in partnership with other organizations could lead to further analysis of the opium markets as more price data and market information is gathered. The data compiled so far should be examined to assess possible changes in the intensity and coverage of the information, for example, the assessment of the tradeoffs between wide coverage of markets vs. the frequency of information collected, quality of data collected from different informants and methods used (i.e., person to person or telephone interviews). Some stakeholders suggested the possibility to increase the transparency of the methods used to estimate border prices of opiates.

5. **Eradication verification**

100. **Recommendation 18:** The entire eradication verification should be done by ground surveys to ensure the necessary accuracy. However, this activity has to be weighted with the risk involved in verifying while eradication is taking place. If eradication verification has to be continued, manpower constraints, exclusive acquisition of satellite data of eradication and its interpretation need to be addressed.\(^{36}\)

101. **Recommendation 19:** If eradication verification is to be continued, the following is recommended:

- Prepare a methodology manual for eradication verification.
- Do not to include the results in Annual Opium Poppy Survey; they can be provided to the interested stakeholders for internal use.
- Acquire exclusive remote sensing data for eradication verification such as aerial photographs or videography, data from unmanned aerial vehicles or specifically programmed high-resolution satellite data.

6. **Capacity development**

102. **Recommendation 20:** The UNODC should alert the Government of Afghanistan and donors that under the current situation it is unlikely that the

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\(^{35}\) The software is mentioned here because it is widely available for no-commercial purposes.

\(^{36}\) Eradication verification requires about 20 percent of the annual Illicit Crop Monitoring Programme effort, uses more than 65 percent of the Illicit Crop Monitoring Programme annual budget and has a prominent role in the socio-economic surveys.
transfer of the Illicit Crop Monitoring Programme will happen by 2010. Although UNODC has made a significant contribution to build the capacity of the Ministry of Counter Narcotics, some factors, which are beyond the Illicit Crop Monitoring Programme’s control, impede the process.

103. **Recommendation 21**: A strategic plan for capacity development which should build on its present “plan for capacity development” to monitor illicit crops and the impact of poppy cultivation reduction needs to be prepared in consultation with the stakeholders but most importantly, emphasising the participation of the Ministry of Counter Narcotics personnel as recipients of knowledge to monitor illicit crops and apply this to other domains as well, such as monitoring of licit agricultural crops and products. Ownership of the strategic planning process is of foremost importance. An inception workshop should address the conceptual, institutional, technical and developmental concerns transparently. There should be a series of discussions to distil quantifiable indicators for the acquisition of skills needed to devolve the management of illicit crop monitoring programme to the Ministry of Counter Narcotics. A work plan, including specific personnel responsibilities, financial arrangements, logistics, time tables and a process monitoring scheme needs to be designed and agreed upon.

104. **Recommendation 22**: As part of such plan the Illicit Crop Monitoring Programme would have to identify each and every component of the annual work plan, beyond the details in Annex IV, Table 1 and Annex I, Fig. 3. More procedural information is required such as time sheets and levels of effort, assessments of the reliability of data collection and delegation of responsibility to the Ministry of Counter Narcotics staff for all necessary tasks to carry out the monitoring of poppy opium of the Illicit Crop Monitoring Programme, as presently managed. The plan should include a time table of expected reduction in capacity gaps between the Illicit Crop Monitoring Programme Kabul and the Ministry of Counter Narcotics Kabul, and the Ministry of Counter Narcotics Kabul and the Ministry of Counter Narcotics in the different provinces. The transition from the Illicit Crop Monitoring Programme to the Ministry of Counter Narcotics should be based on the principle that funds are provided stepwise, based on tangible results. This principle should be agreed by the Illicit Crop Monitoring Programme and the Ministry of Counter Narcotics and it is likely to be welcomed by the donors. Because the authority for hiring and firing would eventually be transferred to the Ministry of Counter Narcotics, a very strict surveillance by the Illicit Crop Monitoring Programme Kabul would be required to minimize the possible incidence of corruption in the monitoring programme (about 400 permanent and part-time jobs).

105. **Recommendation 23**: The resulting strategic plan should clearly state the mechanism that will support the creation of an enabling environment conducive for innovation and development of illicit crop monitoring programme and measurement of impacts in reduction of poppy cultivation. The strategy should promote efficiency and effectiveness in using financial and human resources through better coordination, more effective implementation at all levels and the promotion of an integrated approach to allow optimal resource use and timely transfer of knowledge.

106. **Recommendation 24**: What follows is a series of non-comprehensive recommendations that should be part of the strategy for capacity development:
Further training on statistical procedures for the analysis of village surveys and price monitoring need to be explicitly included in the capacity building activities for the Ministry of Counter Narcotics and the Illicit Crop Monitoring Programme Kabul with clear indicators for results-based achievement in different tasks.

A system of incentives to retain personnel should be in place. Possibly, the salary structure could be supplemented with study travel and specialized training to help retain personnel.

Translations to Pashto and Dari of abridged documents should be made available throughout.

7. Dissemination of information, data-sharing and documentation

107. **Recommendation 25:** A policy for data-sharing at the Illicit Crop Monitoring Programme should be in place. The data sets, since 1994, should be exportable with proper documentation—in agreement with the field questionnaires (labels and units). Data should be available at different levels of aggregation: from its raw form (as it is gathered in the field) to the way the data is presented in the Annual Opium Poppy Survey, depending on the needs of the user. The documentation standard should be that of International Organisation for Standardisation or any other standard used by the United Nations System. Confidentiality of information should be guaranteed with proper manipulation or restrictions to access certain fields in the data sets. The mechanism to access or request the information should be published in the UNODC website; people who would use the data should agree to refer to the source of data provided by the Illicit Crop Monitoring Programme and should notify the Illicit Crop Monitoring Programme and the Research and Analysis Section about the resulting publications or outcomes derived from making use of these international public goods. This policy should contribute to enhance the knowledge of the biophysical and socio-economic issues related to illicit agriculture, and its dual, licit agriculture.

108. **Recommendation 26:** The Illicit Crop Monitoring Programme should consider documentation of key processes, achievements and lesson-learned from the Illicit Crop Monitoring Programme implementation to facilitate institutional learning. This documentation process may start with a synthesis of the Illicit Crop Monitoring Programme evolution.

VI. Overall conclusions

109. The world at large is the user of core Illicit Crop Monitoring Programme products: area and production of opium poppy in different agro-ecological conditions and the price of opium and opiates in different markets throughout Afghanistan. Since most of the illicit opiates sold in the world originate in Afghanistan, the implication for worldwide public health cannot be over-emphasized. The fragile situation of the Islamic Republic of Afghanistan, with poor

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37 Annexes in Annual Opium Poppy Survey reports provide a rich final product but users may wish raw or intermediate data. Currently, the UNODC website does not provide access to Annual Opium Poppy Survey prior to 2000.
rule of law and law enforcement, and widespread poverty and corruption, is highly linked to the rampant opium economy. Therefore, the monitoring of the opium economy is crucial for policy design and has implications for global and regional security. This situation calls for an impartial and reliable monitor such as the Illicit Crop Monitoring Programme. The Illicit Crop Monitoring Programme is a highly efficient and low cost operation that delivers high quality international public goods on a timely fashion. It is difficult to quantify the social benefits of these products, but we know that its annual cost is about US$ 2 million.

110. The Illicit Crop Monitoring Programme should continue to monitor area and yield under opium poppy cultivation and opium prices to enable the Government of Afghanistan and the international community to design counter narcotic policies in accordance with prevailing conditions. Possible improvements in area and production estimates (yield equations estimated with Afghan data and an agricultural land use map identifying annually cropped areas, short and long fallow areas) or opium prices (data gathering methods based on the analysis of tradeoffs between telephone or personal interviews, size of the pool of informants and frequency of price information gathered) should be considered in relation to policy design rather than technology or data-driven precision under the current situation in Afghanistan.

111. Opium eradication is a policy instrument to deter farmers from growing opium poppy and the involvement of the Illicit Crop Monitoring Programme in eradication verification could jeopardize its image as a credible and impartial monitor. The Illicit Crop Monitoring Programme should consider the benefit of its involvement in eradication verification towards effective counter narcotics policy development.

112. The UNODC management needs to ascertain whether the Illicit Crop Monitoring Programme Kabul should be considered as a monitoring service entity or there is latitude for research in agro-ecological characterisation and opium poppy yield modelling, value chain analysis or integration of opium markets with possible incursions in counter narcotics policy analysis. Under the research option there would be a steep mountain to climb and this would require extra mentorship support. Under the monitoring option, on one hand there are some methodological issues to be addressed that determine the quality of socio-economic data gathered from the field surveys and on the other hand, there is need to lift the know-how of the staff in Kabul, both at UNODC and the Ministry of Counter Narcotics, on data gathering, quantification and interpretation of results. The UNODC management should be cautious to avoid making socio-economic generalisations ignoring the limitations of the data.

113. Since 2005, the Illicit Crop Monitoring Programme embraced an ambitious programme on capacity building for the Ministry of Counter Narcotics aimed to hand over most of the responsibilities of crop monitoring to the Ministry of Counter Narcotics by 2010 with minor supervision by UNODC. Several topics have been addressed in the capacity development program to empower Ministry of Counter Narcotics staff between January 2005 and May 2006. Since June 2006 there are ongoing training activities in remote sensing, GIS, data interpretation, computer literacy and survey techniques, project management and English report writing. Starting with the Opium Winter Rapid Assessment Survey 2006, both the Ministry of Counter Narcotics and the Illicit Crop Monitoring Programme Kabul have shared responsibilities in data processing and interpretation. Activities for 2008 to 2011 are
included in the most recent work plan of the Illicit Crop Monitoring Programme, but there are no quantitative or qualitative indicators of the progress to be achieved by personnel holding key positions for different activities. A structured capacity development scheme is required. Although considerable progress has been made, based on the present status of technical know-how, problems to retain qualified staff, and resources available at the Ministry of Counter Narcotics Kabul and provinces, it is unlikely that the transfer of the Illicit Crop Monitoring Programme to the Ministry of Counter Narcotics will take place by 2010. This should be communicated to the donors, and stakeholders, as soon as possible.

114. A strategic plan for capacity development is recommended. This plan should clearly state the mechanism that will support the creation of an enabling environment conducive for innovation and development of Illicit Crop Monitoring Programme and measurement of impacts in reduction of poppy cultivation. The strategy should promote efficiency and effectiveness in using financial and human resources through better coordination, more effective implementation at all levels and the promotion of an integrated approach to allow optimal resource use and timely transfer of knowledge.

115. The self-assessment approach used in the field permitted a thorough understanding of the merits and limitations of the Illicit Crop Monitoring Programme in relation to what the stakeholders expect as services or products. The Independent Evaluation Unit could use this experience altogether with the other four programmes evaluated in the Country Office in Afghanistan to draw some operational and methodological conclusions for further evaluations within the UNODC.
Annex I

Abridged evolution of the Illicit Crop Monitoring Programme in Afghanistan, components, agricultural context and capacity developed

Table 1
Abridged evolution of the Illicit Crop Monitoring Programme in Afghanistan

<table>
<thead>
<tr>
<th>Year</th>
<th>Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>United Nations Drug Control Programme, based in Islamabad, Pakistan, started monitoring opium cultivation in Afghanistan using a census approach. UNDCP operated on its own, but with the permission of the Taliban regime.</td>
</tr>
<tr>
<td>1998</td>
<td>United Nations Drug Control Programme improvised a methodology by combining the census approach and sample Satellite Remote Sensing. The activities in Afghanistan became part of the Global Illicit Crop Monitoring Programme to compile reliable and internationally comparable data on the extent and evolution of illicit cultivation. The Programme continued to operate with the permission of the Taliban regime. A series of socio-economic studies was set in place.</td>
</tr>
<tr>
<td>2001</td>
<td>The Taliban regime was removed, and the Provisional Islamic Government was internationally recognized. The Illicit Crop Monitoring Programme continued its mission without interruption and adapted to extremely difficult and dangerous situations in the country.</td>
</tr>
<tr>
<td>2002</td>
<td>UNODC enhanced the Illicit Crop Monitoring Programme with a combination of census approach and Satellite Remote Sensing using coarse and high resolution data. The number of human resources involved was 150.</td>
</tr>
<tr>
<td>2003</td>
<td>Illicit Crop Monitoring Programme introduced village and farmer surveys, as well as value-chain analysis. The number of human resources involved was 150, with a cost of US$ 544,000.</td>
</tr>
<tr>
<td>2004</td>
<td>Illicit Crop Monitoring Programme partnered with Cranfield University, UK, to enhance remote sensing methodology. The number of human resources involved was 200, with a cost of US$ 984,000.</td>
</tr>
<tr>
<td>2005</td>
<td>Elected government of the Islamic Republic of Afghanistan was in place. UNODC signed a Memorandum of Understanding with the Ministry of Counter Narcotics. Capacity of Country Office in Afghanistan/Illicit Crop Monitoring Programme was built on remote sensing and devolution of activities from Illicit Crop Monitoring Programme to the Ministry of Counter Narcotics began with field surveys. Eradication verification survey started as a separate project. The number of human resources involved was 200, with a cost of US$ 1,515,000.</td>
</tr>
<tr>
<td>2006</td>
<td>Frame sampling was combined with medium resolution satellite data with an updated land cover (agriculture mask). Training of the Ministry of Counter Narcotics staff on remote sensing/GIS, and socio-economic data collection, data encoding, and database maintenance continues. A joint publication between UNODC and The World Bank was published. The number of human resources involved was 250, with a cost of US$ 2,079,000.</td>
</tr>
</tbody>
</table>
2007
Training to Ministry of Counter Narcotics staff continued. Eradication verification survey continued. More and gradual delegation of activities to the Ministry of Counter Narcotics continued. The number of human resources involved was 370, with a cost of US$ 2,386,000.

Tentatively in 2010
Transfer of opium surveys to the Ministry of Counter Narcotics; UNODC plays a limited supervisory role.

Source: UNODC; compilation made by the evaluators.

Fig. 1. Components of the Illicit Crop Monitoring Programme in Afghanistan.
Fig. 2. Opium poppy and wheat production in Afghanistan. Source: FAOSTAT and UNODC.

Fig. 3. Illicit Crop Monitoring Programme team in Afghanistan, role and capacity created.
Annex II

Terms of reference for the thematic evaluation of the Illicit Crop Monitoring Programme

I. Background

UNODC has been actively supporting the government of Afghanistan since the inception of the transitional Islamic state of Afghanistan in December 2001. It has been working in partnership with the government of Afghanistan, the United Nations agencies and donors, and has been expanding its role for the relevant ministries (Counter Narcotics, Interior, Justice, Reconstruction and Rural development, Public Health).

In order to increase governments’ capacity to monitor illicit crops and to assist the international community in monitoring the extent and evolution of illicit crops in the context of the elimination strategy adopted by the Member States at the General Assembly Special Session on Drugs in June 1998, UNODC has been providing overall coordination and direct technical support and supervision to establish illicit crop monitoring system at country level.

The monitoring systems supported by UNODC are tailored to the national contexts and include a strong capacity building element. The direct participation of UNODC in the national monitoring systems ensures the transparency of the survey activities and gives additional credibility to the published results. Through its network of monitoring experts at headquarters and in the field, the Illicit Crop Monitoring Programme ensures the conformity of the national systems with international methodological standards and with the information requirements of the international community. The Illicit Crop Monitoring Programme facilitates the dissemination of methodological best practices among the national systems, and it assumes a quality control function for the data produced.

Since 2002, satellite imagery and sampling survey techniques have been part of the annual survey in Afghanistan, in addition to the existing village (ground) survey. In 2003, a price-monitoring component was introduced and since 2004, opium prices are collected monthly and shared with interested parties. In 2003, UNODC expanded its regional offices in Afghanistan. At present, UNODC has 5 provincial offices in Afghanistan, which play a key role in providing UNODC with the latest information from the field, as well as in the implementation of the survey. Since 2006, the project also includes an eradication verification component. In 2005 and 2006, the survey questionnaire included additional questions on the socio-economic situation of farmers, as well as a data collection component for opium poppy yield and crop diseases.
Capacity building has always been an important component of the present project. UNODC is gradually handing over the survey activities to the Ministry of Counter Narcotics, starting with the implementation of the 2006 Rapid Assessment Survey. A three-year period is foreseen for the complete hand over of the field survey activities to the Ministry of Counter Narcotics, while UNODC will continue its role in supervision, methodology development and reporting.

Presently, opium poppy monitoring approach includes four interrelated components: (a) Rapid Assessment Survey (December-February, at opium poppy growth mid-cycle), (b) Annual Opium Survey (March-August, during harvest time), (c) Opium price monitoring (monthly, throughout the year), (d) Eradication verification (December-July)

(a) Rapid Assessment Survey: Prior to the implementation of the annual opium poppy survey, a rapid assessment survey covering entire Afghanistan is carried out to provide an indication of the trends in opium poppy cultivation for the coming season.

(b) Annual Opium Survey: Annual opium poppy survey has several components:

(i) Satellite survey: Extent of cultivations are measured using high-resolution imagery. Estimates of cultivations are provided at the provincial level and indicative cultivation at the district

(ii) Village survey: In addition to the interpretation of satellite images, the project also implements a sample village survey. It relies on farmer’s interviews and surveyor’s visual estimation of the level of opium poppy cultivation at the village level. The sample village survey will also collect information related to opium yield, price and socio-economic data and will be conducted in a number of randomly selected villages.

(iii) Yield survey: To estimate opium yield, and hence opium production, the annual survey uses the capsule measurement technique following “Guidelines for Yield Assessment of Opium Gum and Coca Leaf from Brief Field Visits” developed by UNODC in 2001.

(iv) Crop calendar (photo collection): In order to interpret the satellite images and to identify the different crops, it is essential to know the details of the crop growth cycle of the major crops. Therefore, surveyors collect pictures from the fields in selected villages and provinces every 15 days for 3 months. This information also helps to determine the best dates for the satellite imagery collections and to interpret the data derived from satellite image for the compilation of the vegetation index.

(v) Socio-economic data: Opium survey collects socio-economic information on the average farmer’s opium production and income, the use and conditions of employment of external labour, the opium harvest calendar, the use of credit, and related information, which is not available from other sources in the required quality, coverage or at a spatially disaggregated level, through the annual opium survey or specific studies. This information is collected to better understand the socio-economic impact of a decrease in opium poppy cultivation, reasons motivating farmers to increase or decrease cultivation, and the relationship between poverty and opium poppy cultivation.
(c) Opium Price Monitoring: Opium prices are collected on a monthly basis in the Northern, North-eastern, Eastern, Southern, and Western Region throughout the year. A distinction will be made between farm-gate prices and market prices, as well as between fresh and dry opium. The sample usually comprises about 20 farmer’s observations per region, complemented with ancillary observations from traders. (Note however that, as opium markets are now illegal and traders face prosecution if caught, the collection of price information from traders might not be as systematic as it would be desirable from a scientific point of view.)

(d) Eradication Verification Survey: Upon request of, and in consultation with the parties involved in eradication activities in Afghanistan, UNODC conducts annual eradication verification surveys in all provinces: The results are reported in the Annual Opium Survey Report. It also provides weekly eradication updates during the eradication campaign depending on data availability, quality and requests from stakeholders.

II. Purpose of the evaluation

The purpose of this evaluation is to assess how the UNODC development cooperation builds the capacity of the Afghanistan government to monitor and provide accurate and timely information on production of poppy to the national and international government and policy makers, as well as how effectively has IMCP created more information and knowledge within the international community.

The evaluation will draw lessons learned, best practices and recommend improvements. At the same time, the evaluation will address the issue of what is the net value added of UNODC’s work and its strategic positioning.

The evaluation will use as the preliminary assessment for the Global Evaluation on Illicit Crop Monitoring which is part of the Independent Evaluation Unit work plan for 2008.

The present evaluation is conducted as part of the 2007 work plan of the Independent Evaluation Unit and under the “UNODC technical Cooperation to Afghanistan”. The Unit will closely work with the Europe and West/Central Asia Section (EWCAS), and Research Analysis and Scientific Support Unit at Vienna and Afghanistan Field Office during all phases of the exercise.

III. Scope of the evaluation

The evaluation will undertake a comprehensive assessment of the illicit crop-monitoring programme of the UNODC Afghanistan.

The evaluation will measure effects and impacts of the Illicit Crop Monitoring Programme, examine UNODC’s support to the Afghanistan government, and draw lessons and best practices. Apart from this, the evaluation will concentrate on whether/how UNODC’s support played a role in developing national capacity, enhancing national ownership, advocating and fostering an enabling policy environment, fostering partnership and coordination throughout the evaluation process.

The evaluation will answer the following key questions in its final report. These questions remain generic, but are consistent with standard approaches to Programme
evaluation. There should be an element of flexibility, as the evaluation progresses, to adjust the evaluation’s focus in response to changing circumstances.

Evaluators selected will have to develop specific evaluation questions, based on the following generic questions.

The list of key evaluation questions follows the evaluation criteria of UNODC.

**Relevance** – in terms of the development needs of the country.

- How strategically relevant and necessary is the crop monitoring system to Government of Afghanistan and UNODC?
- What difference has the crop monitoring made (in terms of results and processes) at the UNODC corporate and country level?

**Effectiveness** – in terms of influencing policy framework, capacity to monitor drug production and supply, maintaining and improving the system in the country.

- To what extent did crop monitoring support influence the policy framework and intellectual approaches to elimination of illicit drug production and supply?
- How does illicit crop monitoring assistance enable the Government of Afghanistan to develop its capacity to monitor and report on production of Poppy? Have adequate human, technical and financial resources been created?
- Are survey methodologies technically sound and does it provide accurate and timely information to the Government of Afghanistan, UNODC and other member states? Review the quality of data and analysis contained in the reports. Assess process followed in the preparation of reports.
- Is capacity building strategy of transferring skills to the Government of Afghanistan effective? Is there any evidence that personnel trained is using skills and knowledge gained from the training on monitoring illicit crop production and supply?
- What are the potential challenges that may prevent the UNODC programme operation from producing intended results?

**Sustainability** – in terms of promoting lasting changes, maintaining and improving the crop monitoring system.

- Has UNODC developed the capacity of the Afghan government and institutions to undertake illicit crop monitoring and other surveys on their own?
- Is there any evidence of capacity development (institutional and human) that can be interpreted as guaranteeing sustainability? What concrete actions or measures have been taken, or are required, to ensure the sustainability of national agencies established/supported by the projects (e.g. structural, managerial and behavioural change)?
- Is the Government of Afghanistan is ready to take over the responsibility of collecting, analysing and reporting of production and supply data?

**Efficiency** – in terms of mobilising partnership and coordination with other stakeholders.
• Is the Ministry of Counter Narcotics the appropriate government body for building capacity? Assess quality, timeliness, effectiveness and sustainability of management arrangements, technical inputs and assistance provided to the Ministry of Counter Narcotics.

• Has adequate and appropriate backstopping support been provided by headquarters Unit (quality of reporting, administrative, and managerial support)?

• What are the potential challenges that may prevent the operations from producing intended results?

• Was the best-possible quality of results achieved with the financial resources available?

Impact – in terms of influence on policy and programming.

• How do the different stakeholders, especially government of Afghanistan, implementing partners, other United Nations agencies, bilateral and multilateral donors, perceive the overall impact of the UNODC illicit crop monitoring supports?

Lessons learned and best practices from the Illicit Crop Monitoring Programme?

• Identify key lessons on positioning that can provide a useful basis for strengthening UNODC support to Afghanistan and for improving programme performances, results and effectiveness in the future.

• Through in-depth assessment, present and highlight features to be considered as good practices and lessons learned at country level.

• Draw lessons from unintended results where possible.

IV. Evaluation methodology

The evaluation will take into consideration of commonly agreed international evaluation norms and standards, including “Guiding Principles for Evaluation at UNODC”, “Standards of Evaluation in the United Nations System”, “Norms for Evaluation in the United Nations System (UNEG)” etc.

This evaluation Terms of Reference provides an overarching framework for the evaluation. The team leader and team members of the evaluation are expected to appreciate the Terms of Reference and develop an evaluation framework with instruments to be discussed and agreed on by UNODC’s Evaluation Unit. The evaluation framework should be flexible to accommodate any adjustment necessary due to the volatile political and security situation of Afghanistan and produce the best possible output.

The suggested key methods for the conduct of the evaluation will be the following (but should not be limited to):

• A historical and contextual review of program e.g. the problem of illicit drugs in Afghanistan as well as a review of the present dispensation in Afghanistan.

• A comprehensive desk review of external and internal policy, programme and survey reports published to date. This will include a review of official
documents, budgets, reports, websites and publications that deal with UNODC assistance to Afghanistan for illicit crop monitoring.

• An extensive round of interviews and focus group discussions with the key stakeholders (Government, Donors, United Nations Assistance Mission in Afghanistan (UNAMA), United Nations agencies, etc.) at both national and sub-national levels, and UNODC staff at headquarters and in Afghanistan field office.

• Interview of former representatives and former employees of UNODC (where possible) who can provide insights about some of the early challenges

• Field visits to the selected sites to gain first-hand information of the interventions.

The evaluation will be a participatory process that will give due importance to self-assessment by stakeholders involved in programme design and implementation. All information will – to the largest possible extent – be triangulated (use of three or more sources of information to verify and substantiate an assessment) and validated. Findings, conclusions, recommendations and lessons learned should clearly be action oriented and feed into major decision-making for future strategy and programme development.

V. Evaluation team

The area covers a wide range of activities: rapid assessment survey, annual opium survey (satellite, village, yield surveys, crop calendars, socio-economic data), opium price monitoring, eradication verification survey. Two consultants, which will carry out the evaluation, together with the Evaluation Officers of the Independent Evaluation Unit:

• one survey specialist, with a socio-economic/agriculture economics background and with expertise in survey methodology, socio-economic surveys, etc. and

• one Geographic Information System (GIS) specialist, with theoretical knowledge and practical experience of using GIS techniques.

The survey specialist will be primarily responsible to examine survey methodology, quality of data collection, use of survey results in policy and programming, and capacity of government in carrying out future surveys. The survey specialist will also act as the team leader, receiving inputs from the GIS consultant on technical aspects of crop monitoring through GIS.

Both consultants will need to have:

• Experience in planning, programme management and evaluation of Project/programme/policy in their thematic area.

• Previous work/research/evaluation experience in Afghanistan (desirable)

• Knowledge of the United Nations or international development organizations (preferable)

• Understanding of gender considerations

• Fluency in English and excellent writing skills
The Independent Evaluation Unit’s Evaluation Officers will work as full members and will bring to the team knowledge of country programme evaluation methodology and knowledge of UNODC’s operations and its thematic areas.

VI. Management arrangements and deliverables

The Independent Evaluation Unit will manage the evaluation and ensure coordination and liaison with concerned regional desk at headquarters’ level. The task manager of the Independent Evaluation Unit in consultation with the Chief of the Independent Evaluation Unit will lead the process, in close consultation with the regional desk and the country management (Representative and Evaluation Focal Person). The Chief of the Independent Evaluation Unit and the task manager will also ensure substantive supervision of all, and determine the evaluation team composition.

The UNODC country office will take a lead role in:

- Provide the team with a complete set of documents on the programme and different projects.
- Actively engage in discussions with the team.
- Organize logistics (including translation if required)
- Organize meetings with relevant stakeholders in Afghanistan, as well as foreseen field mission within Afghanistan.
- Organize the final internal and external workshops – and take an active role in the dialogue and interaction with stakeholders on the findings and recommendations,

The UNODC Independent Evaluation Unit will meet all costs directly related to the conduct of the evaluation. These will include costs related to participation of the evaluation consultants, the Independent Evaluation Unit staff member, and any stakeholder workshops during the evaluation mission.

Key deliverables

The Evaluation team is expected to deliver following key outputs:

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<th>Deliverables</th>
<th>Responsibilities</th>
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<tr>
<td>An inception report containing appreciation of Terms of Reference, final evaluation methodology and instruments, including evaluation matrix</td>
<td>The Team Leader will be in charge of drafting the report, with inputs from the other team member on GIS.</td>
</tr>
<tr>
<td>Draft evaluation reports</td>
<td>Each team member will prepare a report covering his/her specific area</td>
</tr>
<tr>
<td>Draft Illicit Crop Monitoring Programme evaluation report</td>
<td>The Team Leader will be in charge of drafting the report, with inputs from the other team member.</td>
</tr>
<tr>
<td>Final Illicit Crop Monitoring Programme evaluation report</td>
<td>The Team Leader will be in charge of drafting the report, with inputs from the other team member, and incorporating the Independent Evaluation Unit, Afghanistan Country Office and substantive offices.</td>
</tr>
</tbody>
</table>
The evaluation team members will hold a feedback session and present the initial findings in a workshop format to the country management team and external stakeholders based in Kabul after completion of the field mission in Afghanistan. The evaluation task manager and the Chief of the Independent Evaluation Unit will attend and participate in the presentation and feedback workshop.

Once the team leader submits the first draft evaluation report, the report will be examined by the Independent Evaluation Unit for the quality and fulfilment of the Terms of Reference.

Supported by Afghanistan Country Office in terms of logistics, the Independent Evaluation Unit will present its first findings during:

- an internal feedback session for Afghanistan Field Office.
- an external feedback session for stakeholders in Afghanistan.
- circulate the draft report to all stakeholders involved (Field Offices, headquarters and, if relevant, external stakeholders) for feedback, comments and any correction to potential errors or omissions.

The team leader taking the comments of the Independent Evaluation Unit and UNODC programme staff and stakeholders will adjust the report accordingly, subject to their agreement with the comments made, and send the final report the Independent Evaluation Unit of UNODC.

**Timetable and Key Milestones**

<table>
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<tr>
<th>Dates</th>
<th>Milestones</th>
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</table>
| September-October 2007 | • Circulation of the draft Terms of Reference to the relevant headquarters desk and Field Office for comments  
                         • Finalization of Terms of Reference                                                                                      |
| October 2007        | • Recruitment of consultants  
                         • Briefing on Afghanistan Country Programme at headquarters  
                         • Appreciation of Terms of Reference and development of evaluation methodology with instruments |
| October-November 2007 | • Independent review by the evaluation team (headquarters and country mission)                                                              |
| November 2007       | • Submission of draft report by the evaluation team  
                         • Briefing on draft evaluation findings and recommendations  
                         • Circulation of draft report for feedback                                                                                |
| December 2007       | • Submission of Final Report                                                                                                               |
VII. Payment

The consultants will be issued a consultancy contract and paid as per the common United Nations rules and procedures.

Lump sum payment in 3 instalments:

- 1st payment: upon signing the contract (travel expenses + 75% of DSA).
- 2nd payment: 50% the fees + 25% DSA on reception of the draft report by the Independent Evaluation Unit.

The 3rd and final payment (50% (remaining) fees) will be made only after completion of the respective tasks and reception of the final version of the report and clearance by the Independent Evaluation Unit.
### Annex III

#### List of stakeholders interviewed

<table>
<thead>
<tr>
<th>Name</th>
<th>Post and Affiliation</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Sandeep Chawla</td>
<td>Chief, Policy Analysis and Research Branch, Division for Policy Analysis and Public Affairs, UNODC</td>
<td>Vienna, Austria</td>
</tr>
<tr>
<td>Mr. Thibault le Pichon</td>
<td>Chief, Research and Analysis Section, Division for Policy Analysis and Public Affairs, UNODC</td>
<td>Vienna, Austria</td>
</tr>
<tr>
<td>Mr. Martin Raitelhuber</td>
<td>Program Officer, Illicit Crop Monitoring Programme, Research and Analysis Section, UNODC</td>
<td>Vienna, Austria</td>
</tr>
<tr>
<td>Mr. James C. Jones</td>
<td>Consultant to the Independent Evaluation Unit</td>
<td>Virginia, USA</td>
</tr>
<tr>
<td>Ms. Katharina Kaiser</td>
<td>Strategic Planning Unit, Policy Analysis and Research Branch, Division for Policy Analysis and Public Affairs, UNODC</td>
<td>Vienna, Austria</td>
</tr>
<tr>
<td>Mr. Gautam Babbar</td>
<td>Strategic Planning Unit, Policy Analysis and Research Branch, Division for Policy Analysis and Public Affairs, UNODC</td>
<td>Vienna, Austria</td>
</tr>
<tr>
<td>Ms. Rachel Chetham</td>
<td>Afghan Drugs Inter-Departmental Unit (ADIDU), Foreign and Commonwealth Office</td>
<td>London, UK (teleconference)</td>
</tr>
<tr>
<td>Mr. Francis Maertens</td>
<td>Chief, Division for Policy Analysis and Public Affairs, UNODC</td>
<td>Vienna, Austria</td>
</tr>
<tr>
<td>Mr. Andrea Mancini</td>
<td>Projects Coordinator (Afghanistan), Europe, West and Central Asia Section, UNODC</td>
<td>Vienna, Austria</td>
</tr>
<tr>
<td>Mr. Bernard Frahi</td>
<td>Chief, Partnership in Development Branch, Division for Operations, UNODC</td>
<td>Vienna, Austria</td>
</tr>
<tr>
<td>Ms. Doris Buddenberg</td>
<td>Sr. Manager, Global Initiative to Fight Human Trafficking, UNODC and Former Country Director, Afghanistan</td>
<td>Vienna, Austria</td>
</tr>
<tr>
<td>Mr. Chris Payne</td>
<td>Project Manager Alternative Livelihoods Programme South</td>
<td>Kandahar (teleconference)</td>
</tr>
<tr>
<td>Prof. Barnett Rubin</td>
<td>Director of Studies and Senior Fellow, Center on International Cooperation, New York University</td>
<td>New York, USA (teleconference)</td>
</tr>
<tr>
<td>Ms. Elisabeth Bayer</td>
<td>Deputy Representative Country Office in Afghanistan-UNODC, Kabul</td>
<td>Kabul, Afghanistan</td>
</tr>
<tr>
<td>Mr. Haken Demirbüken</td>
<td>Regional Monitoring Expert, Regional Office for Central Asia – UNODC, Tashkent, Uzbekistan</td>
<td>Kabul, Afghanistan</td>
</tr>
<tr>
<td>Name</td>
<td>Post and Affiliation</td>
<td>Location</td>
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</tr>
<tr>
<td>Mr. Shirish Ravan</td>
<td>International Project Coordinator, Country Office in Afghanistan-UNODC, Kabul</td>
<td>Kabul, Afghanistan</td>
</tr>
<tr>
<td>Mr. Nazir Ahmad Shah</td>
<td>National Programme Officer, F-98, Illicit Crop Monitoring Programme, UNODC</td>
<td>Kabul, Afghanistan</td>
</tr>
<tr>
<td>Mr. Ziauddin Zaki</td>
<td>Data Expert, Illicit Crop Monitoring Programme, UNODC</td>
<td>Kabul, Afghanistan</td>
</tr>
<tr>
<td>Mr. Fazal Mohammad Fazil; Mr. Mohammad Alam Ghalib; Mr. Altaf Hussain Joya; and Mr. Mohamme Alem Yaqubi.</td>
<td>Provincial Coordinators, Illicit Crop Monitoring Programme, Kandahar, Nangarhar, Hirat and Badakhshan zones, respectively.</td>
<td>Kabul, Afghanistan</td>
</tr>
<tr>
<td>Gen. Khodai Dad</td>
<td>Deputy Minister of Ministry of Counter Narcotics, Government of Afghanistan</td>
<td>Kabul, Afghanistan</td>
</tr>
<tr>
<td>Mr. Mohammad Ibrahim Azhar</td>
<td>Director of Survey and Monitoring, Ministry of Counter Narcotics, Government of Afghanistan</td>
<td>Kabul, Afghanistan</td>
</tr>
<tr>
<td>Ms. Christina Oguz</td>
<td>Country Representative, Country Office in Afghanistan-UNODC, Afghanistan</td>
<td>Kabul, Afghanistan</td>
</tr>
<tr>
<td>Ms. Rosemary Thomas</td>
<td>First Secretary, British Embassy</td>
<td>Kabul, Afghanistan</td>
</tr>
<tr>
<td>Mr. Sebastian Heath</td>
<td>Eradication Stream Leader, Foreign &amp; Commonwealth Office, Afghan Drugs Inter-Departmental Unit</td>
<td>London (interviewed in British Embassy Kabul, Afghanistan)</td>
</tr>
<tr>
<td>Mr. Andreas Lovold</td>
<td>Second Secretary, Royal Norwegian Embassy</td>
<td>Kabul, Afghanistan</td>
</tr>
<tr>
<td>Ms. Merete Dyrud</td>
<td>Counselor, Development Cooperation</td>
<td>Kabul, Afghanistan</td>
</tr>
<tr>
<td>Mr. Andrew Weir</td>
<td>Chief Technical Advisor, Alternative Agricultural Livelihoods Programme, United Nations – FAO</td>
<td>Kabul, Afghanistan</td>
</tr>
<tr>
<td>Mr. Kent Morris</td>
<td>Narcotics Affairs Officer, International Narcotics and Law Enforcement (INL), Embassy of the United States of America</td>
<td>Kabul, Afghanistan</td>
</tr>
<tr>
<td>Mr. Gene Trammell</td>
<td>AEF Deputy Program Manager, CIVPOL Programme, Afghanistan</td>
<td>Kabul, Afghanistan</td>
</tr>
<tr>
<td>General M. Amazi</td>
<td>ANP Poppy Eradication Force Commander</td>
<td>Kabul, Afghanistan</td>
</tr>
<tr>
<td>Mr. David Mansfield</td>
<td>Afghan Drugs Inter-Departmental Unit (ADIDU), Foreign and Commonwealth Office</td>
<td>London, UK (teleconference)</td>
</tr>
<tr>
<td>Mr. Lutf Rahan Lutfi</td>
<td>Provincial Coordinator, UNODC</td>
<td>Mazar-e-Sharif</td>
</tr>
<tr>
<td>F-98 field team in Balkh province</td>
<td>Survey Coordinator and Asst. Survey Coordinator</td>
<td>Mazar-e-Sharif</td>
</tr>
<tr>
<td>Mr. A. Aruf Qaderi</td>
<td>Area Manager, Agency Coordinating Body for Afghan Relief</td>
<td>Mazar-e-Sharif</td>
</tr>
<tr>
<td>Name</td>
<td>Post and Affiliation</td>
<td>Location</td>
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</tr>
<tr>
<td>Gen. Ata Mohammad Noor</td>
<td>Governor of Balkh Province</td>
<td>Mazar-e-Sharif</td>
</tr>
<tr>
<td>Mr. Katib Shama</td>
<td>Director of Balkh Agriculture and Irrigation</td>
<td>Mazar-e-Sharif</td>
</tr>
<tr>
<td>Mr. Gulam Nabi Faqiri</td>
<td>Admin. Chief (ex-Director), Ministry of Counter Narcotics, Northern region</td>
<td>Mazar-e-Sharif</td>
</tr>
<tr>
<td>Mr. Paul Fishtein</td>
<td>Director, Afghanistan Research and Evaluation Unit, Kabul</td>
<td>Kabul, Afghanistan</td>
</tr>
<tr>
<td>Mr. Alan Roe</td>
<td>Senior Researcher, Natural Resource Management, AREU</td>
<td>Kabul, Afghanistan</td>
</tr>
<tr>
<td>Mr. Mohammad Khaiber Wardak</td>
<td>Database Unit, Ministry of Counter Narcotics</td>
<td>Kabul, Afghanistan</td>
</tr>
<tr>
<td>Prof. John C. Taylor</td>
<td>Cranfield University</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>Ms. Anja Korenblik</td>
<td>Illicit Crop Monitoring Programme Manager, UNODC</td>
<td>Vienna, Austria</td>
</tr>
<tr>
<td>Mr. William A. Byrd</td>
<td>World Bank, South Asia Division</td>
<td>Washington, D.C.</td>
</tr>
<tr>
<td>Mr. Hasmatulla Asek and Mr.</td>
<td>Regional Survey Coordinators, Ministry of Counter Narcotics</td>
<td>Kandahar and Nangarhar</td>
</tr>
<tr>
<td>Abdul Mateen</td>
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Annex IV

Implementation of the Illicit Crop Monitoring Programme in Afghanistan

Table 1
Annual work plan (2006-2007) and required human resources for Illicit Crop Monitoring Programme implementation in Afghanistan

<table>
<thead>
<tr>
<th>Survey Activity Plan</th>
<th>Coverage</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Annual effort (%)</th>
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<tbody>
<tr>
<td>Informal Assessment of cultivation</td>
<td>44 provinces</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Winter Rapid Assessment Survey</td>
<td>696 villages</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Eradication Verification</td>
<td>22 provinces</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Ground truth for image analysis</td>
<td>385 segments + 175 points</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Annual Village Survey</td>
<td>1560 villages</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>Satellite data collection</td>
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</tr>
</tbody>
</table>

Human resources: MON/UNODC Survey Coordinators and 55 surveyors

Source: ISW/PABU

---

Table 2. Opium Rapid Assessment Survey, number of surveyors and coverage during 2001-2007.

<table>
<thead>
<tr>
<th>Year</th>
<th>Surveyors</th>
<th>Villages</th>
<th>Districts</th>
<th>Provinces</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>17</td>
<td>2,770</td>
<td>51</td>
<td>7</td>
</tr>
<tr>
<td>2002</td>
<td>42</td>
<td>208</td>
<td>42</td>
<td>5</td>
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<tr>
<td>2003</td>
<td>36</td>
<td>126</td>
<td>45</td>
<td>5</td>
</tr>
<tr>
<td>2004</td>
<td>50</td>
<td>172</td>
<td>87</td>
<td>22</td>
</tr>
<tr>
<td>2005</td>
<td>46</td>
<td>225</td>
<td>199</td>
<td>34</td>
</tr>
<tr>
<td>2006</td>
<td>70</td>
<td>469</td>
<td>266</td>
<td>34</td>
</tr>
<tr>
<td>2007</td>
<td>79</td>
<td>508</td>
<td>236</td>
<td>34</td>
</tr>
</tbody>
</table>


---

Table 3. Annual Opium Poppy Survey, number of surveyors and coverage during 1994-2007.

<table>
<thead>
<tr>
<th>Year</th>
<th>Surveyors</th>
<th>Villages</th>
<th>Districts</th>
<th>Provinces</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>--</td>
<td>2,109</td>
<td>--</td>
<td>8</td>
</tr>
<tr>
<td>1996</td>
<td>64</td>
<td>5,433</td>
<td>--</td>
<td>8</td>
</tr>
<tr>
<td>1996</td>
<td>41</td>
<td>4,036</td>
<td>--</td>
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</tr>
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<td>1997</td>
<td>64</td>
<td>4,498</td>
<td>--</td>
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<td>1998</td>
<td>73</td>
<td>5,227</td>
<td>75</td>
<td>14</td>
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<tr>
<td>1999</td>
<td>111</td>
<td>6,842</td>
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<td>16</td>
</tr>
<tr>
<td>2000</td>
<td>126</td>
<td>7,541</td>
<td>125</td>
<td>22</td>
</tr>
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<td>2001</td>
<td>164</td>
<td>10,030</td>
<td>160</td>
<td>23</td>
</tr>
<tr>
<td>2002</td>
<td>22</td>
<td>171</td>
<td>48</td>
<td>9</td>
</tr>
<tr>
<td>2003</td>
<td>61</td>
<td>1,830</td>
<td>170</td>
<td>28</td>
</tr>
<tr>
<td>2004</td>
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<td>2,496</td>
<td>307</td>
<td>34</td>
</tr>
<tr>
<td>2005</td>
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<td>1,900</td>
<td>311</td>
<td>32</td>
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<td>2006</td>
<td>128</td>
<td>1,554</td>
<td>323</td>
<td>34</td>
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<tr>
<td>2007</td>
<td>127</td>
<td>1,520</td>
<td>368</td>
<td>34</td>
</tr>
</tbody>
</table>

Source: Annual Opium Poppy Survey, UNDCP and UNODC various years.
Annex V

Area and cultivation

Fig. 1. Agriculture mask prepared from Landsat ETM 2000 for Afghanistan.

Fig. 2. Frame sampling design and its distribution pattern: sample frames are mapped using high resolution satellite images.
Fig. 3. Frame samples are located on the maps within the frame, segment samples of 250 x 250m are visited on the ground for detailed data collection. Source: ICMP Kabul.

Fig. 4. Frame samples were interpreted for opium during 2002-2006 using the supervised digital technique; starting on 2007, the visual interpretation technique is used. Source: ICMP Kabul.

Fig. 5. Poppy cultivation under high resolution in three different physiographic locations showing different associations. The separability at this resolution is largely controlled by the contextual information/interpretation, hence, visual interpretation is recommended for accurate mapping. Source: ICMP Kabul.
Annex VI

Redistribution of villages sampled in the 2007 Annual Opium Poppy Survey

The number of villages to be sampled in different provinces and altitudinal strata for 2007 is shown on Table 1. Based on the visual location of the villages on a map and the surveyors’ knowledge of the presence of poppy areas, the sampling was modified accordingly. The final number of villages selected for sampling for the different provinces and altitudinal strata is presented in Table 2.

Table 1. Number of villages to be sampled by province and by altitude in the 2007 AOPS.

<table>
<thead>
<tr>
<th>Province</th>
<th>Altitude</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;=1500 m</td>
<td>&gt;1500 and &lt;=2500 m</td>
</tr>
<tr>
<td>Badakhshan</td>
<td>14</td>
<td>59</td>
</tr>
<tr>
<td>Badghis</td>
<td>18</td>
<td>13</td>
</tr>
<tr>
<td>Baghlan</td>
<td>24</td>
<td>11</td>
</tr>
<tr>
<td>Balkh</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>Bamyan</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Day Kundi</td>
<td>1</td>
<td>31</td>
</tr>
<tr>
<td>Farah</td>
<td>33</td>
<td>6</td>
</tr>
<tr>
<td>Faryab</td>
<td>25</td>
<td>7</td>
</tr>
<tr>
<td>Ghazni</td>
<td>0</td>
<td>52</td>
</tr>
<tr>
<td>Ghor</td>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td>Hilmand</td>
<td>45</td>
<td>12</td>
</tr>
<tr>
<td>Hirat</td>
<td>52</td>
<td>20</td>
</tr>
<tr>
<td>Jawzjan</td>
<td>17</td>
<td>1</td>
</tr>
<tr>
<td>Kabul</td>
<td>3</td>
<td>29</td>
</tr>
<tr>
<td>Kandahar</td>
<td>61</td>
<td>36</td>
</tr>
<tr>
<td>Kapisa</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>Khost</td>
<td>17</td>
<td>9</td>
</tr>
<tr>
<td>Kunar</td>
<td>14</td>
<td>9</td>
</tr>
<tr>
<td>Kunduz</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>Laghman</td>
<td>17</td>
<td>5</td>
</tr>
<tr>
<td>Logar</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td>Nangarhar</td>
<td>37</td>
<td>12</td>
</tr>
<tr>
<td>Nimroz</td>
<td>21</td>
<td>0</td>
</tr>
<tr>
<td>Nuristan</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Paktika</td>
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<td>44</td>
</tr>
<tr>
<td>Paktya</td>
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<td>19</td>
</tr>
<tr>
<td>Panjshir</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Panwan</td>
<td>6</td>
<td>23</td>
</tr>
<tr>
<td>Samangan</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>Sari Pul</td>
<td>17</td>
<td>6</td>
</tr>
<tr>
<td>Takhar</td>
<td>24</td>
<td>6</td>
</tr>
<tr>
<td>Urugzan</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>Wardak</td>
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<td>19</td>
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<tr>
<td>Zabul</td>
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</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>528</strong></td>
<td><strong>591</strong></td>
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</table>

Source: ICMP Kabul.
Table 2. Number of villages sampled by province and by altitude after redistribution of the sample in the 2007 AOPS, cells in grey were modified compared those in Table 1 above; percentage changes by province and by altitude stratum are included.

<table>
<thead>
<tr>
<th>Province</th>
<th>&lt;=1500 m</th>
<th>&gt;1500 and &lt;=2500 m</th>
<th>&gt;2500 m</th>
<th>Total</th>
<th>% change</th>
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</thead>
<tbody>
<tr>
<td>Badakhshan</td>
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<td>36</td>
<td>25</td>
<td>111</td>
<td>17</td>
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<tr>
<td>Badghis</td>
<td>18</td>
<td>13</td>
<td>3</td>
<td>34</td>
<td>6</td>
</tr>
<tr>
<td>Baghlan</td>
<td>24</td>
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<td>41</td>
<td>0</td>
</tr>
<tr>
<td>Balkh</td>
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<td>3</td>
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<td>30</td>
<td>74</td>
<td>-19</td>
</tr>
<tr>
<td>Farah</td>
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<td>3</td>
<td>42</td>
<td>2</td>
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<td>7</td>
<td>3</td>
<td>35</td>
<td>7</td>
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<td>Ghazni</td>
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<td>20</td>
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<td>3</td>
<td>63</td>
<td>-15</td>
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<tr>
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<td>3</td>
<td>38</td>
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</tr>
<tr>
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<td>0</td>
<td>97</td>
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<td>3</td>
<td>35</td>
<td>30</td>
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<td>3</td>
<td>38</td>
<td>64</td>
</tr>
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<td>0</td>
<td>20</td>
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</tr>
<tr>
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<td>3</td>
<td>38</td>
<td>62</td>
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<tr>
<td>Logar</td>
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<td>-29</td>
</tr>
<tr>
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<td>19</td>
<td>8</td>
<td>27</td>
<td>-17</td>
</tr>
<tr>
<td>Panjshir</td>
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<td>4</td>
<td>12</td>
<td>32</td>
</tr>
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<td>15</td>
<td>11</td>
<td>32</td>
<td>-20</td>
</tr>
<tr>
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<td>5</td>
<td>35</td>
<td>40</td>
</tr>
<tr>
<td>Sari Pul</td>
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<td>8</td>
<td>40</td>
<td>30</td>
</tr>
<tr>
<td>Takhar</td>
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<td>15</td>
<td>4</td>
<td>41</td>
<td>21</td>
</tr>
<tr>
<td>Unuzgan</td>
<td>20</td>
<td>17</td>
<td>5</td>
<td>42</td>
<td>43</td>
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<tr>
<td>Wardak</td>
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<td>19</td>
<td>15</td>
<td>34</td>
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<td>56</td>
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</table>

**Grand Total**: 595 617 277 1489  5

% change: 13 4 -38 -5

Source: ICMP Kabul
Annex VII

Socio-economic data-gathering (farmers’ surveys)

The tables below were prepared by Illicit Crop Monitoring Programme staff and the evaluation team in Kabul using the 2007 Annual Opium Poppy Survey socio-economic data.

### Table 1. Household income (US$) for non-poppy growing families by region.

<table>
<thead>
<tr>
<th>Region</th>
<th>no. obs.</th>
<th>Mean</th>
<th>St. Dev.</th>
<th>CV (%)</th>
<th>90% CI (%)</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central</td>
<td>261</td>
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<td>1,491</td>
<td>74</td>
<td>123</td>
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<td>245</td>
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<td>58</td>
<td>143</td>
<td>80</td>
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</tr>
<tr>
<td>North-East</td>
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<td>1,040</td>
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<td>124</td>
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</tr>
<tr>
<td>North</td>
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<td>2,287</td>
<td>1,962</td>
<td>88</td>
<td>171</td>
<td>111</td>
<td>26,843</td>
</tr>
<tr>
<td>South</td>
<td>325</td>
<td>3,955</td>
<td>2,647</td>
<td>74</td>
<td>310</td>
<td>268</td>
<td>26,793</td>
</tr>
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<td>West</td>
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<td>1,005</td>
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<td>103</td>
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<td>76</td>
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<td>26,843</td>
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</table>

Source: ICMP Kabul and Evaluation Team.

### Table 2. Household income (US$) for poppy growing families by region.

<table>
<thead>
<tr>
<th>Region</th>
<th>no. obs.</th>
<th>Mean</th>
<th>St. Dev.</th>
<th>CV (%)</th>
<th>90% CI (%)</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central</td>
<td>261</td>
<td>2,497</td>
<td>1,628</td>
<td>77</td>
<td>181</td>
<td>24</td>
<td>7,940</td>
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<tr>
<td>East</td>
<td>139</td>
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<td>1,160</td>
<td>54</td>
<td>193</td>
<td>320</td>
<td>6,240</td>
</tr>
<tr>
<td>North-East</td>
<td>62</td>
<td>2,843</td>
<td>1,082</td>
<td>38</td>
<td>269</td>
<td>800</td>
<td>5,219</td>
</tr>
<tr>
<td>North</td>
<td>46</td>
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<td>2,698</td>
<td>76</td>
<td>780</td>
<td>597</td>
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</tr>
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<td>112</td>
<td>1,002</td>
<td>633</td>
<td>46</td>
<td>154</td>
<td>697</td>
<td>5,572</td>
</tr>
<tr>
<td>Afghanistan</td>
<td>2,271</td>
<td>3,934</td>
<td>3,078</td>
<td>78</td>
<td>224</td>
<td>320</td>
<td>26,303</td>
</tr>
</tbody>
</table>

Source: ICMP Kabul and Evaluation Team.

### Table 3. Income distribution by region.

<table>
<thead>
<tr>
<th>Region</th>
<th>% cum. farmers</th>
<th>% cum. income</th>
<th>Non-poppy growing families</th>
<th>% cum. farmers</th>
<th>% cum. income</th>
<th>Poppy growing families</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central</td>
<td>25</td>
<td>9</td>
<td>25</td>
<td>9</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>East</td>
<td>50</td>
<td>25</td>
<td>50</td>
<td>24</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>North-East</td>
<td>45</td>
<td>39</td>
<td>25</td>
<td>46</td>
<td></td>
<td>46</td>
</tr>
<tr>
<td>North</td>
<td>25</td>
<td>57</td>
<td>25</td>
<td>57</td>
<td></td>
<td>57</td>
</tr>
<tr>
<td>South</td>
<td>25</td>
<td>33</td>
<td>25</td>
<td>35</td>
<td></td>
<td>35</td>
</tr>
<tr>
<td>West</td>
<td>25</td>
<td>60</td>
<td>25</td>
<td>62</td>
<td></td>
<td>62</td>
</tr>
<tr>
<td>Afghanistan</td>
<td>25</td>
<td>50</td>
<td>25</td>
<td>25</td>
<td></td>
<td>25</td>
</tr>
</tbody>
</table>

Source: ICMP Kabul and Evaluation Team.

### Table 4. Per capita income for poppy and non-poppy growing families.

<table>
<thead>
<tr>
<th>Region</th>
<th>No. memb. per fam.</th>
<th>Per capita income (US$/day)</th>
<th>Non-popp</th>
<th>Poppy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central</td>
<td>6.2</td>
<td>0.50</td>
<td>1.11</td>
<td></td>
</tr>
<tr>
<td>East</td>
<td>6.0</td>
<td>0.90</td>
<td>0.99</td>
<td></td>
</tr>
<tr>
<td>North-East</td>
<td>5.7</td>
<td>1.05</td>
<td>1.36</td>
<td></td>
</tr>
<tr>
<td>North</td>
<td>6.0</td>
<td>1.04</td>
<td>1.61</td>
<td></td>
</tr>
<tr>
<td>South</td>
<td>6.7</td>
<td>1.57</td>
<td>1.30</td>
<td></td>
</tr>
<tr>
<td>West</td>
<td>6.1</td>
<td>0.69</td>
<td>0.81</td>
<td></td>
</tr>
<tr>
<td>Afghanistan</td>
<td>6.2</td>
<td>1.01</td>
<td>1.74</td>
<td></td>
</tr>
</tbody>
</table>

Source: ICMP Kabul and Evaluation Team.
Box 1
Some comments on farmers’ questionnaires

The following comments about information-gathering instruments, such as the survey questionnaire design, interpretation of results and assessment of the effectiveness of the design using one question for the poppy-growing farmers, supplement observations made about sampling procedures.

Why do you grow poppy?

In the 2006 questionnaire, the high selling price of opium was mentioned as the most frequent answer (41 per cent) for farmers that grow opium, followed by the high demand for opium (16 per cent), high cost of weddings (12 per cent), needed for personal consumption (9 per cent) and possibility of getting a loan (8 per cent), among 9 possible answers (Annual Opium Poppy Survey 2006, p. 73). In the 2007 questionnaire, poverty alleviation (provision of basic food and shelter) was the most frequent answer (29 per cent), followed by the high selling price (25 per cent), possibility of obtaining a loan (6 per cent), high cost of weddings (13 per cent) and high demand for opium (10 per cent), among 9 possible answers (Annual Opium Poppy Survey 2007, p. 99). The narrative of results in 2007 mentioned that the “demand for opium for personal consumption” decreased in 2007 with respect to 2006, as reflected by opium prices (the farm gate price of fresh opium was US$ 86 per kg in 2007 and US$ 94 per kg in 2006). While this explanation was plausible, the examination of the questionnaires showed that the option to answer ‘poverty alleviation’ in 2007 had replaced ‘expected compensation for eradication’ as an optional answer in 2006, and it was put at the top of the list of possible answers in the 2007 Annual Opium Poppy Survey questionnaire.

The possible explanatory value of a change in opium price was clouded with the introduction of poverty alleviation as the top answer option in the new questionnaire. To ask a question with 9 possible answers that could seem indistinguishable to a farmer or to a surveyor (high price of opium or high demand for opium) or that involve multiple dimensions such as poverty alleviation is likely to give a result that is difficult to interpret.

Often, when faced with questions with multiple answers, farmers are requested to mention the two or three or most likely answers and to rank them to facilitate interpretation. Questionnaire design is complex and there is a need to reflect on how the formulation of the questions affects the quality of responses. While one can observe some changes in the questions asked in different years, the changes are not always commented on and, therefore, it is difficult to determine if the acquisition of new knowledge or information is applied to improve questionnaire design.

*Source*: 2006 and 2007 questionnaires for poppy-growing and non-poppy-growing farmers.
Annex VIII

Eradication verification

Fig. 1. Approach for eradication verification.

Fig. 2. Field-verified GPS locations are transferred to the satellite images. Yellow dots denote GPS points with eradicated fields; white colour indicates areas reported by surveyors; cyan colour indicates areas estimated based on satellite image validation. Source: ICMP Kabul.
Fig. 3. Sample check of eradication verification in Jalalabad.

Fig. 4. Sample check of eradication verification in Uruzgan.
Annex IX

Supporting documents provided by the Independent Evaluation Unit, UNODC


Bonn Agreement, Agreement on Provisional Arrangements in Afghanistan Pending the Re-establishment of Permanent Government Institutions.


Country Office Afghanistan (hard and soft) Pipeline Projects (as of February 2007).

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Opium Poppy Harming Women’s and Children’s Health in Afghanistan, June 2007 (Video Clip).


UNDCP, Scientific Section and Illicit Crop Monitoring Programme, Guidelines for Yield Assessment of Opium Gum and Coca Leaf from Brief Field Visits, 2001.


UNODC, Afghanistan, Opium Poppy Free Road Map and Provincial Profiles, October 2007 – work in Progress.


UNODC, Independent Evaluation Unit, Evaluation Standards.


UNODC, Independent Evaluation Unit, Evaluation Assessment Questionnaire.

UNODC, Independent Evaluation Unit, Guiding Principles for Evaluation at UNODC.

UNODC, Independent Evaluation Unit, Standard Format and Guidelines for Project Evaluation Reports.

UNODC, Independent Evaluation Unit/Strategic Planning Unit, Glossary of Terms.


UNODC, Project Document: AFG/H09, Capacity Building for Drug Demand Reduction in Afghanistan (Kabul, Balkh and Heart), (2003-2007), Approved by PPC-08/05/03.


UNODC, Project Revision 2 – AFG/H09, Capacity Building for Drug Demand Reduction in Afghanistan (Kabul, Balkh and Heart), (2003-2007), November 2006 (including revised budget).

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UNODC, Project Revision Document IV:AD/AFG/02/F98: Monitoring of Opium Production in Afghanistan, 21/02/06.


UNODC, Project Revision Document:AD/AFG/02/F98: Monitoring of Opium Production in Afghanistan (26/09/06).


UNODC, Project Revision: AFG/H87, Drug Demand Reduction Information, Advice and Training Service for Afghan Communities Living in Refugee Camps in...


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