THE SENLIS COUNCIL

Security and Development Policy Group

Poppy for Medicine

Licensing poppy for the production of essential medicines: an integrated counter-narcotics, development, and counter-insurgency model for Afghanistan

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Contents

Executive Summary

Poppy for Medicine in Afghanistan: an integrated grassroots counter-narcotics and counter-insurgency model

Afghanistan faces an unprecedented security and reconstruction crisis

Resolving Afghanistan's illegal opium crisis is the key to the international community's successful stabilisation and development of the country. Yet, by over-emphasising failed counter-narcotics strategies such as forced poppy eradication, the United States-led international community has aggravated the security situation, precluding the very reconstruction and development necessary to remove Afghan farmers' need to cultivate poppy.

Current counter-narcotics policies are risking mission failure in Afghanistan

In 2006 Afghanistan produced 92% of the world's total illegal opium. The size of the illegal opium economy is threatening the development and reconstruction process by weakening the rule of law and jeopardising the legitimacy of the Afghan government. Yet the counter-narcotics policies currently being pursued in an attempt to resolve Afghanistan's poppy crisis are fuelling support for the Taliban and the insurgency. In particular, the failure to deliver promised livelihoods alternative to illegal poppy cultivation has caused disillusionment and increased distrust. The Taliban is capitalising on this and the forced eradication of poppy crops to increase its support base within rural farming communities.

> ***"If these foreigners really care about the people of Afghanistan, then why do they destroy our crops; why do they deprive us from the only source of our livelihood, without providing us with any alternative? Is this fair?"***
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> Local leader, Kama District, Nangarhar Province, May 2006[1]

[1] Ali Wardak, "Integrated Social Control in Afghanistan: Implications for the Licensed Cultivation of Poppy for the Production of Medicines," The Senlis Council, May 2006, [online] Available at:

Afghanistan's opium crisis is no longer a mere counter-narcotics problem. It has become one of the main impediments to the success of the international community's mission in the country: until Afghanistan's poppy crisis is positively and sustainably addressed, the country's security and development crises cannot be resolved.

An integrated economic solution to Afghanistan's poppy and insurgency crises

Based on extensive on-the-ground research, The Senlis Council has developed a *Poppy for Medicine* project model for Afghanistan as a means of bringing illegal poppy cultivation under control, and building support for the international community's counter-insurgency mission in an immediate yet sustainable manner. It involves licensing the controlled cultivation of poppy to produce essential poppy-based medicines such as morphine, with unlicensed poppy cultivation remaining a criminal activity. Poppy licensing for the production of medicines is an alternative counter-narcotics strategy that has been successfully implemented in many countries.[2]

Tailored to the realities of Afghanistan, *Poppy for Medicine* projects would link the country's two most valuable resources - poppy cultivation and strong local village control systems - to secure the controlled cultivation of poppy for the local production of morphine. The resulting economic benefits would provide farming communities with access to the strategic economic assets necessary to end their reliance on poppy cultivation. The key feature of the Afghan *Poppy for Medicine* project model is that village-cultivated poppy would be transformed into morphine tablets in the Afghan villages. The entire production process, from seed to medicine tablet, can thus be controlled by the village in collaboration with government and international actors,

http://www.senliscouncil.net/modules/publications/012_publication/documents/integrated_social_control_afghanistan

[2] *Poppy for Medicine* projects were established in Turkey in the 1970s with the support of the United States and the United Nations, as a means of breaking farmers' ties with the international illegal heroin market without resorting to forced poppy crop eradication. Within just four years, this strategy successfully brought the country's illegal poppy crisis under control. See The Senlis Council, "A Political History of Poppy Licensing in Turkey," May 2006, [online] Available at: http://www.senliscouncil.net/modules/publications/010bis_publication
The Indian Government has also successfully licensed the cultivation of poppy for the production of medicines as a means of controlling the country's poppy cultivation. For further discussion of this, see Romesh Bhattacharji, "Case Study: India's experiences in licensing poppy cultivation for the production of essential medicines – lessons for Afghanistan," June 2007, [online] Available at: http://www.senliscouncil.net/modules/publications/021_publication

and all economic profits from medicine sales would remain in the village, triggering economic diversification. As internationally tradable commodities, locally-produced medicines would also benefit the Afghan government.

Integrated security systems provide maximum physical and quality control

By transforming poppy into morphine medicines in Afghan villages, the entire poppy cultivation system can be controlled at three levels, by maximising Afghanistan's renowned tradition of strong local control systems. *Poppy for Medicine* project villages, with the support of government actors and international development and security experts, can secure and provide quality control the entire manufacturing process, from the seeds to the final medicine tablets. Exported directly from the villages to Kabul and international markets in tablet form, the trade in locally produced medicines can be completely secured.

Grassroots economic development necessary to win locals' hearts and minds

Locally owned and operated, these village-based poppy control models would have beneficial ink-blot effects on security and economic development in the regions around the villages, and thus complement the international community's mission in Afghanistan. As an economic development-orientated counter-narcotics initiative, *Poppy for Medicine* projects would impact significantly on the international community's efforts to counter the insurgency. Field research has revealed that the vast majority of current insurgents are driven primarily by economic incentives. These insurgents join the insurgency because they have no jobs and no way to feed their families. By triggering economic development in rural communities and integrating these communities within the Afghan legal economy and government system, the *Poppy for Medicine* projects would decrease insurgents' recruitment bases.

Creating vested interests in the Poppy for Medicine project

In *Poppy for Medicine* projects, the local transformation of raw poppy materials into medicines would bring the inherent economic value of poppy directly to the village, thereby providing strong economic incentives for rural communities to permanently terminate their links with drug traffickers. **Able to access a stable livelihood, rural communities would be provided with a real choice between the illegal and legal economy, and a real opportunity to support the Karzai government.** As such,

Poppy for Medicine projects would provide project communities with a vested interest in protecting the projects.

Poppy for Medicine model adaptable to local conditions

The village-based *Poppy for Medicine* project model is grounded in proven, local control systems which were documented in extensive sociological and criminological field research undertaken throughout 2005 and 2006. The model can be easily adapted to the specific circumstances of different regions of Afghanistan, where *Poppy for Medicine* projects are most needed.

An Afghan-owned solution to the Global Pain Crisis

The locally-based production of poppy-based medicines in *Poppy for Medicine* projects would not only reduce illegal opium and heroin production in Afghanistan, they would also provide emerging and transitional countries with access to affordable essential painkilling medicines. According to the International Narcotics Control Board whose mandate is to ensure an adequate supply of morphine for medical and scientific purposes, 80 percent of the world's population, including Afghans, face an acute shortage of essential morphine medicines. Further, pain experts have highlighted that even when these medicines are available, patients often face significant affordability problems. There is a clear the need to find structural solutions to enhancing the affordability of controlled medicines. Exported under special trade frameworks from Afghan villages for use within the region and around the world, Afghan village-produced morphine would provide a structural solution to help address the global demand for affordable essential painkillers. Extensive field research and economic modelling demonstrates that **Afghanistan could supply this market with medical morphine at a price at least 55 percent lower than the market average**.

Towards a scientific pilot project

The Senlis Council offers this Technical Dossier to the Afghan government and the international community for their urgent attention. This initial research should be followed up by a scientific pilot project that further tests the parameters and specification of the village-based *Poppy for Medicine* model, **starting in the next planting season.**

Introduction

As the raw material for essential painkilling medicines such as morphine, if carefully controlled, the opium poppy can be a positive resource, both for economic development, and to bring illegal drug production under control. This *Poppy for Medicine* Technical Dossier comprises a blueprint for the implementation of integrated grassroots-level counter-narcotics and counter-insurgency projects. These projects are village-based *Poppy for Medicine* schemes; through which small Afghan village-based organisations are licensed to locally produce simple poppy-based medicines, for sale by the Afghan government to meet the growing global need for affordable painkilling medicines.

Morphine: a simple poppy-derived pain medicine remains the world's most effective painkiller

The benchmark to which all new painkilling medicines are measured, morphine is the *gold standard* in pain management, and forms the basis of treatment for pain around the world.[3]

A nineteenth century medicine, morphine was discovered in 1805. The extraction of morphine from raw poppy materials is relatively simple, requiring inexpensive chemicals and simple chemical processes, and ten kilograms of raw poppy materials yields approximately one kilogram of morphine medicines.

While in the past morphine was used to treat everything from insomnia to alcohol abuse, today morphine forms the bedrock of pain management for patients suffering from all moderate to severe pain, including pain associated with HIV/AIDS and cancer. On the World Health Organisation's Model List of Essential Medicines, morphine is considered the world's most effective painkiller.

[3] International Narcotics Control Board, Estimated World Requirements for 2006, part 4, p 78 [online]. Available at: http://www.incb.org/pdf/e/tr/nar/2005/narcotics_part4_en.pdf,

The licensed cultivation of poppy for the production of medicines has important precedents as a counter-narcotics strategy, and indeed, Afghanistan's current Counter Narcotics Law provides for the implementation of poppy licensing schemes.[4] Based on this law, on international precedents (see box), and on extensive field research, a *Poppy for Medicine* project model has been developed which is tailored to the complexities of Afghanistan.[5]

Community control the key condition for Poppy for Medicine Project licence

The initiative would not provide a blanket license for all Afghan farming communities to grow poppy and produce opium. Rather, specific farming communities would be licensed by a central government agency to implement *Poppy for Medicine* projects to locally produce morphine medicines under tightly controlled and highly monitored conditions. **Receipt of these licences would carry three conditions: the unavailability of sustainable livelihoods alternative to poppy cultivation in a potential project village;[6] a community-wide commitment to the elimination of drug trafficking in the areas under community control; and an undertaking to implement economic diversification activities.**

Poppy for Medicine project model is compliant with international law

Providing for the production and export of finished poppy-based medicines, the *Poppy for Medicine* project model would not unbalance the international system of raw poppy materials supply, and would therefore comply with the regulations of the 1961 Single Convention on Narcotic Drugs, the international legal instrument which

[4] Islamic Republic of Afghanistan, "Counter Narcotics Law", Article 7, paragraph 3, [online] Available at: http://www.mcn.gov.af/eng/downloads/documents/drug_law.pdf. Notably, Turkey benefited from a similar project in the 1970s with the support of the United States and the United Nations, as a means of breaking farmers' ties with the international illegal heroin market without resorting to forced poppy crop eradication. Within just four years, this strategy successfully brought the country's illegal poppy crisis under control. For more information see Political History of Poppy Licensing in Turkey, [online] Available at: http://www.senliscouncil.net/modules/publications/010bis_publication/documents/Political_History_Poppy_Licensing_Turkey_May_2006

[5] These realties are that two of Afghanistan's existing resources – strong local control systems and poppy cultivation expertise – can be leveraged to provide access to the capital and other strategic assets necessary to end farming communities' reliance on poppy.

[6] The official Afghan Counter-Narcotics Strategy provides that unless sustainable alternative livelihoods are available, forceful counter-narcotics operations should not be implemented: Islamic Republic of Afghanistan Ministry of Counter-Narcotics, "National Drug Control Strategy: an Updated Five-Year Strategy for Tackling the Illicit Drug Problem," Kabul. 2006, [online] Available at: http://www.fco.gov.uk/Files/kfile/NDCSfinal%20_Jan%202006.pdf

governs the production and export of raw poppy materials from supply countries to manufacturing countries.[7] Further, the finished morphine medicines exported from Afghanistan would only be sold to those countries currently lacking access to affordable pain medicines. As such, Afghan-made medicines would not compete with current international medicine suppliers.[8]

International precedent for poppy licensing as an alternative to forced eradication

In 1970 the US offered financial compensation in return for the eradication of poppy in Turkey. The Turkish government refused, emphasising the political weight of the 70,000 poppy farming families, with Prime Minister Demirel saying "eradication would create a clash between the government forces and the people, and would make the problem worse, since it would create public support for plantings."[9] Turkey insisted that eradication would "bring down the government,"[10] and US memos from this period indicate that the Nixon administration was fully aware that "further pressure to eradicate could 'topple' the Demirel government."[11]

In 1970 the Turkish government decided to pursue the implementation of a poppy licensing system for the production of medicines.[12] Acknowledging that licensed Turkish opium would help resolve the global shortage of poppy-based painkillers, the United States began to support the Turkish poppy licensing programme, extending 'special protected market status' to Turkey under a Drug Enforcement Agency Regulation, commonly known as the '80-20' Rule.[13]

[7] The *Poppy for Medicine* project complies with international regulations as laid down in the 1961 Single Convention on Narcotic Drugs and its protocols. The INCB enforces the self-contained supply and demand system that the convention instigated: Countries are authorised to demand raw poppy materials only according to an estimate based on the amount used in the two previous years. Supply countries can only produce the poppy necessary to fulfil this estimated global demand and must be authorised by ECOSOC to export raw opium-based materials.

[8] This non-competitor aspect is a result of the essential differences between Afghan village-based *Poppy for Medicine* projects and the Indian licensed poppy cultivation programme. The extensive benefits brought to participating Afghan communities through the projects would provide the strong incentives necessary for these communities to completely rule out the diversion that plagues India's licensed poppy cultivation projects.

[9] 'Telegram 1957 from the Embassy in Turkey to the Department of State', (April 2, 1970), in: Foreign Relations.

[10] Ibid.

[11] Bureau of Intelligence and Research, 'Intelligence Note; Turkey: Waiting for the New Government's Opium Program', April 30, 1971 in: Foreign Relations.

[12] 'Memorandum From Secretary of State Rogers to President Nixon', Washington, (July 28, 1970), in: Foreign Relations.

[13] Drug Enforcement Agency Regulation Law 1312.13.

Part A

Poppy for Medicine projects

An integrated counter-narcotics and counter-insurgency model

Part A1

Reining in illegal poppy cultivation through the integrated control of *Poppy for Medicine* projects

A1 Reining in the Afghan Poppy

Summary

Based on a realistic analysis of the economic benefits of the illegal opium trade, village-based *Poppy for Medicine* projects are economic development-orientated counter-narcotics initiatives designed to help Afghan farming communities to end their reliance on illegal poppy cultivation. In doing so, *Poppy for Medicine* projects would help win back the hearts and minds of rural Afghan communities, thereby complementing the international community's stabilisation efforts in the country.

As the name suggests, the local production of poppy-based medicines lies at the heart of the projects. The guiding concept of village-based *Poppy for Medicine* projects is that the profits on sales of these locally-produced, globally sought-after medicines would provide the economic, social, and structural means to end rural Afghan communities' reliance on illegal poppy cultivation, and in doing so, provide the incentives necessary to trigger these communities' committed participation in countering illegal poppy cultivation in Afghanistan.

Projects secured through integration of existing security and control institutions

Village-based *Poppy for Medicine* projects are akin to an alternative counter-narcotics strategy that has been successfully implemented in many other countries. It involves licensing the controlled cultivation of poppy to produce essential poppy-based medicines such as morphine; whilst unlicensed poppy cultivation remains illegal. The most important issue to address in implementing poppy licensing systems is attaining and maintaining high levels of control over the licensed cultivation of poppy. To meet the international and domestic legal requirements regarding the production of poppy-based medicines, and in response to the current security situation and the growing pervasiveness of drug trafficking in Afghanistan, The Senlis Council has developed an *Integrated Control System* to secure and control village-based *Poppy for Medicine*

projects.[14] By monitoring, policing, and regulating every aspect of a *Poppy for Medicine* project, the *Integrated Control System* would make possible the smooth, secure manufacture of medicines in Afghanistan. In addition, the *Integrated Control System* provides for the application of appropriate penalties if necessary.

Three levels of integrated control

The three sets of actors involved in the *Integrated Control System* are the village-level governance institutions known as *shuras*; the Afghan government's relevant Ministries, district governments, and the state-controlled Afghan National Police; and the international community's development agencies currently operating in Afghanistan. The integration of Afghan villages' existing informal local level social control structures with formal government administrative and security oversight and international development and security institutions for the control of *Poppy for Medicine* projects would maximise the capacities and aptitude of each for the efficient and extensive policing, monitoring and sanctioning of the projects. Further, the positive relationships such integration would engender would complement the ongoing efforts of each to defeat the insurgency, and stabilise and develop Afghanistan.

Physical security, logistical security, and quality control assured

In particular, the *Integrated Control System* would secure and control the physical safety of project participants, by preventing disruption of a project by drug traffickers; and would prevent diversion of raw poppy materials by ensuring that project participants permanently terminate their links with drug traffickers. As well as ensuring that all raw poppy products are transformed into medicines, the *Integrated Control System* also provides for extensive quality control throughout the entire medicine production process. With the support of international development agencies, medicine production experts would monitor and supervise trained, qualified staff to ensure the locally-produced medicines meet international quality standards including those in the International Pharmacopoeia and the WHO-endorsed Good Manufacturing Practice Guidelines, and comply with the relevant national

[14] Ali Wardak, "Integrated Social Control in Afghanistan: Implications for the Licensed Cultivation of Poppy for the Production of Medicines," The Senlis Council, May 2006, [online] Available at: http://www.senliscouncil.net/modules/publications/012_publication/documents/integrated_social_control_afghanistan

requirements of importing countries.[15] The production and export of locally-produced medicines would bring significant revenues to the local economy and trigger development. Through the *Integrated Control System,* the advice and support of international development experts would allow for this development to be controlled and maximised.

[15] See for example the World Health Organisation's Good Manufacturing Practices, [online] Available at: http://www.who.int/medicines/publications/pharmacopoeia/overview/en/index.htm

1. Controlling the implementation of *Poppy for Medicine* projects

Providing the foundation for the success of an entire programme of *Poppy for Medicine* projects, the local planning process would be pivotal.[16] Decisions taken during this phase would not only ensure that the medicines produced under *Poppy for Medicine* projects would meet international export standards, they would also ensure that the implementation of the projects in particular villages is transparent and the implementation process is able to be duplicated elsewhere in the country where integrated counter-narcotics and counter-insurgency projects are needed.

1.1 District-level perspective needed to implement *Poppy for Medicine* projects

To achieve the best balance between the security, logistical and quality control requirements associated with producing poppy-based medicines in Afghanistan, the planning and implementation of *Poppy for Medicine* projects must take place at the district level, and include input from district government officials, local power-holders, and other stakeholders.[17] A district-level planning perspective is needed because project modelling indicates that individual *Poppy for Medicine* projects would be most secure and generate maximum economic impact when implemented in a district-wide project "cluster." These clusters would consist of a series of 5-10 individual village-based projects, together with a special district-level *Poppy for Medicine* facility for the manufacture of poppy-based medicines, which would be jointly-owned and operated by the individual village projects.

District-level planning facilitates selection of individual project villages

Whilst the ultimate decision on the exact locations of individual village-based *Poppy for Medicine* projects would rest with the Afghan government, district-level planning

[16] Throughout this document, the phrase *Poppy for Medicine* will be used interchangeably with P4M.

[17] Officially, Afghanistan's 400 districts represent the outer limits of the Afghan central government's control over the country. While this control is centred on the district government office of the *Wolaswal* who interacts with village *shuras*, many districts are also heavily influenced by local power-holders not officially associated with the Afghan government. Nothing happens within the regions under the control of these power-holders without their knowledge and implicit agreement. As such, in planning and implementing *Poppy for Medicine* projects, it would be necessary to work closely with these power-holders to guarantee the security of projects within the district. Such cooperation would help to integrate these power-holders into the 'new Afghanistan,' by providing a real opportunity for them to build positive relationships with the institutions of the central Afghan government.

would facilitate the close involvement of district-level governance structures and other local power-holders necessary to selecting any one project village over another. The district-level planning would allow the Afghan government to benefit from the unique insights of a district's security and economic situation provided by district administrators, local power-holders and other stake-holders, thereby allowing for the implementation of *Poppy for Medicine* projects within individual villages in which economic development is both most needed, and most likely to be sustainable.

P4M Project village selection criteria

When selecting villages within which to implement *Poppy for Medicine* projects, a number of criteria will need to be taken into account:

Social and Political criteria:

- Unavailability of other alternative development projects;
- Commitment of local leadership to compulsory economic diversification;
- Strong local social cohesion;

Geographical criteria:

- Access to a road network to transport materials;

Agricultural criteria:

- Agricultural land and climate suitable for optimal medicinal poppy cultivation;
- Access to securable, irrigated land;
- Local poppy farming expertise;

District-level implementation facilitates meeting of international legal requirements

The district-level implementation of *Poppy for Medicine* projects would also facilitate the meeting of the international legal requirement that poppy licensing schemes be administered by a special government agency.[18] Such an agency has already been established under the 2005 Afghan Counter-Narcotics: the Committee for Drug Regulation. Representatives from this committee could be attached to the existing district governance institutions to coordinate the Afghan government's administrative oversight and security support for *Poppy for Medicine* projects.[19]

District-level implementation maximises quality control of medicines produced in Poppy for Medicine projects

As indicated above, *Poppy for Medicine* projects would need to be implemented in "clusters" of 5-10 individual village-based projects, together with a special district-level *Poppy for Medicine* transformation factory for the manufacture of poppy-based medicines. Such a factory would enable the processing of individual project villages'

[18] As set out in articles 23 and 29 of the 1961 Single Convention on Narcotic Drugs, to implement a poppy licensing programme for the production of poppy-based medicines, a state must establish a National Government Agency to provide administrative oversight of the poppy licensing programme.

[19] The formal institutions of the Afghan central government are represented at the district level by the *Wolaswali*. While the office of the local administrator, the court of justice, and the police unit constitute the core of the *wolaswali*, this district government institution also includes units of finance, national census, communications, land ownership, and the office of the district level attorney general.

dried and tested poppy harvests into finished medicines of international export quality, and would provide a secure environment for the sale of each village project's quantity of finished medicines to the Afghan government.[20] To facilitate government oversight and international development support in controlling the quality of medicine production processes, this district-level *Poppy for Medicine* transformation factory would be located at the seat of the district government, and jointly managed and operated by representatives from the individual village projects. The management and operation of this transformation factory by representatives from the individual village projects would provide the careful local control necessary to prevent corruption and diversion.

The selection of the actual districts within which clusters of *Poppy for Medicine* projects would be implemented would be a decision for the Afghan government, in conjunction with provincial governments, in consultation with security support actors such as the Afghan National Police and the international community's development agencies.

[20] Throughout the transformation process, individual village-based *Poppy for Medicine* projects would retain legal ownership of their project's raw materials, (evidenced through clear documentation) and eventual revenues from sales of medicines to the Afghan government would be based on the quantity of finished medicines produced from their raw materials.

2. Who are the key players in the *Integrated Control System*?

Comprising three sets of actors with varying levels of influence over the actions of Afghanistan's rural farming communities, the *Integrated Control System* has the capacity to completely police and regulate every aspect of both individual village-based projects and entire clusters of *Poppy for Medicine* projects, and to apply appropriate penalties if necessary.

2.1 *Village Shura*: Social control

The *Integrated Control System* leverages the unique information-gathering and information-sharing capacities of Afghan community *shuras* to provide the pivotal levels of control for the implementation and operation of individual village-based *Poppy for Medicine* projects. As the foundation of the *Integrated Control System, shuras* would both ensure the 'buy-in' of project participants, and manage the running of the actual projects.

Shuras retain maximum influence over socio-economic activities of Afghan villages

Shuras are community-level governance structures which strictly enforce social norms and behaviour at all levels of social and economic interaction in rural Afghan communities, through the principle of collective responsibility. The high level of influence *shuras* hold over the day-to-day actions of the inhabitants of their communities can be explained through an examination of the four pyramidal structural levels of authority within which social control is divided in rural Afghanistan. At the bottom of the pyramid are the extended family units known as *koronay*, within which a community's social values are internalised. At the mid-level of the social control pyramid are the small kinship group-based *kalays* (small village), which comprise several *koranay*, and are governed by small groups of family elders known as a *jirga*. At the

Why is the inclusion of shuras so pivotal?
As the country's strongest economic and political units, Afghan villages represent the necessary focal points for grassroots counter-narcotics initiatives such as *Poppy for Medicine* projects. Because most of Afghanistan's poppy is cultivated by rural communities, counter-narcotics strategies must focus on empowering rural communities to end their reliance on illegal poppy cultivation. Deeply influential on village life, the *shura* not only has the necessary geographical proximity, it also has the legitimacy and authority to establish, regulate and control an entire community's committed participation in a *Poppy for Medicine* project.

penultimate layer of the pyramid is the larger *qaria* (village), made up of several *kalays,* and supervised by a *shura.* The *shura* coordinates and resolves issues of importance for the entire *qaria* and its individual members.[21]

Shura acts as a project community's "guarantor"

As the primary controllers of *Poppy for Medicine* projects, *shuras*, and the communities they govern, would effectively operate as each others' co-guarantors. Accountable to their communities, *shuras* would guarantee *Poppy for Medicine* projects bring significant benefits to the project participants and the villages. In return, *shuras* would guarantee their entire community's committed participation in a *Poppy for Medicine* project. If either the *shura* or a community member 'defaulted' on their commitments to the project, the entire project village would lose its licence to cultivate poppy for medicinal purposes, and thus its access to significant economic benefits.

As institutions of justice, decision-making, and social control, *shuras* can apply a range of strong sanctions as preventative, corrective and punitive measures against community members. While extensive sociological and criminological field research strongly indicates that the social pressure from fellow community members and leaders would ensure that project participants do not compromise the security and control of a *Poppy for Medicine* project, an important element in the control and security of *Poppy for Medicine* projects would be to establish at the planning phase known measures to discourage potential improper behaviour.

Suitable to the Afghan rural community context, these measures would take the form of strict sanctions, which would be decided upon by the village *shura* and enacted by the entire community. These may include simple fines or the loss of a position as an

[21] The top level of the pyramidal system of control is the district government, the *Wolaswali.* For further discussion of the capacity of local community-level governance structures to influence the actions of members of Afghanistan's villages, see Ali Wardak, Integrated Social Control in Afghanistan: Implications for the Licensed Cultivation of Poppy for the Production of Medicines, May 2006, [online]. Available at: http://www.senliscouncil.net/modules/publications/012_publication

active project participant, or the more severe punishment of *ratal* – the collective social boycott of an individual.[22]

Key concept in *Poppy for Medicine* projects: Village Control

Economic rationale: local production of medicines

In the global market for poppy-based medicines, finished medicines are significantly more valuable than their raw poppy materials. *Poppy for Medicine* projects would bring this value to Afghan villages, by exploiting Afghan villages' existing cooperative structures to locally produce morphine through the pooling of the village's resources.

Security rationale: security and control of medicine production

As well as making possible the actual production of medicines, basing *Poppy for Medicine* projects in villages allows for each phase of the entire medicine production process to be secured through the village's governance and collective social control systems.

Underlying sociological rationale

Through their strong social control systems based on reciprocal relationships, Afghan villages can effectively guarantee the committed participation of Afghanistan's farming communities in *Poppy for Medicine* projects. The value brought to the village through the local production and sale of morphine would provide villages with sufficient incentives to do so.

2.2 Afghan local and central government: Administrative control; Quality control; and support for Physical control

The careful documentation and close security monitoring of *Poppy for Medicine* projects by relevant local and central Afghan government institutions would meet the requirements of the international regulations governing the production of poppy-based medicines. Perhaps more importantly however, the close involvement of relevant state institutions in the *Integrated Control System* would provide important opportunities

[22] *Ratal* is applied when a party to a dispute under the jurisdiction of the *shura* chooses not to adhere to the *shura's* resolution of that dispute. Because the *shura* is the voice of the whole community, if someone rejects that voice, the whole village will stand against that person.

for positive contact between the Afghan government, its district-level representatives, and rural farming communities.

As one of rural Afghanistan's most important security institutions, the state-directed Afghan National Police would have the capacity to provide the additional security support necessary to ensure the complete physical control of *Poppy for Medicine* projects. In exercising physical and bureaucratic control of *Poppy for Medicine* projects, Afghan local and central government authorities would have recourse to official legal sanctions.

Why is state support important for control?
As well as adding a vital layer of control to *Poppy for Medicine* projects, by facilitating collaboration in the countering of illegal poppy cultivation through local economic development, the overseeing of *Poppy for Medicine* projects will provide a significant opportunity for Afghanistan's institutions of state control to build constructive relationships with rural communities. In particular, the integration of the Afghan National Army in the control of *Poppy for Medicine* projects will provide the ANA with a positive way of implementing counter-narcotics strategies.

2.3 International development agencies: economic development and quality control

The third level of control in the *Poppy for Medicine* project model would be to ensure that the locally-produced medicines are of high-value export quality, and that the profits from sales of these medicines are channelled into the economic development necessary to end participating communities' reliance on poppy cultivation. Through the Kabul-based provision of training, advice, and ongoing monitoring, international development experts would facilitate quality control in the medicine production process. By providing experts to advise on and monitor economic diversification projects funded by medicines sales, representatives from the international community's development agencies operating in Afghanistan would help to maximise the economic impact of *Poppy for Medicine* projects, ensuring their success as grassroots economic development- and counter-narcotics initiatives.

Why include international development agencies?
Economic rationale: In Afghanistan, international development agencies such as DFID or CIDA have almost unparalleled access to development expertise and funding: their assistance from Kabul with the economic control of *Poppy for Medicine* projects would effectively guarantee the maximum economic impact of the projects.

Political rationale: representing the international community to Afghans, DFID and CIDA integration would build grassroots support for the ongoing security and stabilisation mission, and would also provide a practical, positive way for the international community to support the Afghan government in resolving the country's illegal opium crisis.

3. Controlled planning of individual village-level *Poppy for Medicine* projects

Once selected, villages lead planning and consultation phase

As local institutions of collective decision-making, the village *shura* would lead the planning discussions and consultations to decide on the precise format, timing, and parameters of a village-based *Poppy for Medicine* project. The project village *shura's* "inside knowledge" regarding key issues would be absolutely necessary to ensure that the setting of project parameters provides for the sustainable phasing out of the village's reliance on poppy.

Within the districts that clusters of *Poppy for Medicine* projects would be implemented, it would be necessary to convene a group meeting of all the *shuras* from villages operating as part of that project cluster. This group meeting would allow decisions to be made on how the individual projects would operate together as a complete *Poppy for Medicine* project; and how the district processing facility would be managed, operated and controlled.

3.1 Setting key project parameters

Prior to the implementation of each village-based *Poppy for Medicine* project, a number of important decisions would need to be made regarding various project elements which would affect the projects' immediate and ongoing impact on economic development and illegal poppy cultivation. In making these decisions, the *shura* would receive administrative and security support from the Afghan government institutions, and economic development advice from international development agencies. To ensure the smooth implementation and to facilitate the ongoing administration of *Poppy for Medicine* projects, the decisions taken by the *shura* during the planning phase would be extensively documented.

3.2 Agreement on formal project format

The formal format of the project would determine the number of project participants, and the ways in which the revenues from sales of locally produced medicines would be distributed to project participants. To facilitate the actual manufacture of poppy-

based medicines and the fair sharing out of revenues from sales of these medicines, it would be necessary for the village to establish a formal entity which would "employ" project participants. As a locally owned and operated business entity, this organisation would be regulated and controlled by the *shura*.[23]

The *shura* would need to determine the roles and required numbers of 'active' or more 'general' project participant positions, and nominate villagers to be engaged in these roles each project year, according to various criteria such as aptitude (for training as a laboratory technician or administrator), access to securable land (for farmers), farming experience (for harvesters), and commitment to the project aims (for security guards).[24] In such a project format, other villagers not actively engaged in a specific capacity would still play a role in helping to secure the project village, by monitoring other project participants and reporting potential spoilers to the *shura*.

3.3 Decisions on accrual and dispersal of revenues from medicine sales to project participants

On behalf of the active project participants, the *shura* would also need to decide the manner in which revenues would be distributed, via the formal village business entity, to the various project participants. Depending on the needs of the project village, it might be necessary to disburse revenue payments to project participants gradually over the length of the project, similar to wages or a salary. Alternatively, the *shura* could choose to make lump sum payments to project participants at the end of a project cycle, once the locally-produced medicines have been sold. Further, the *shura* could decide that villagers' needs would best be met using a 'split' lump sum payment system, whereby a proportion of the project participant's eventual share of the revenues is delivered upfront to cover their costs throughout the project, with the remainder dispersed at the end of the project cycle.

An essential element of the village-based *Poppy for Medicine* counter-narcotics model is compulsory economic diversification to phase out reliance on poppy cultivation. This economic diversification can be facilitated by allocating a

[23] For further discussion of this formal village business entity, see section Part A2, section 2.2
[24] As a way of further ensuring the support of all stakeholders for *Poppy for Medicine* projects, local power-holders could nominate some of their personal security guards – to be approved by the project village *shura* – for employment as project security guards.

significant proportion of the revenues from sales of locally-produced medicines into a special village account or fund, from which villagers could draw on to finance new business opportunities and community projects.[25] The proportion of the revenues from medicine sales that would be channelled into such an economic diversification fund, and the ways in which project participants would access this fund would depend on the agreed upon project format. In a larger village *Poppy for Medicine* project in which not all villagers play an active role, the remuneration of the more 'general' project participants would consist of access to the village economic diversification fund under micro-finance principles.

3.4 Define project participant roles

In consultation with potential project participants, Afghan government representatives, and international development experts, the *shura* would need to generate specific job descriptions and selection criteria for each role within the *Poppy for Medicine* project. These job descriptions would then determine the 'pay grade' or proportion of the revenues the project participants in particular roles would receive. A project would require a number of land-holding farmers to cultivate the poppy raw materials, a larger number of farm workers to harvest the materials, trained technicians to transform the raw poppy materials into finished medicines, as well as record-keepers, security guards, and project leaders or supervisors. The *shura* would then nominate those villagers who meet the selection criteria for engagement in the project.[26]

The important role of farmers in Poppy for Medicine projects

The role of the farmers in a *Poppy for Medicine* project is particularly important. Responsible for the successful cultivation and harvesting of the raw poppy materials

[25] Similar programmes have been successfully implemented by the World Bank and the Aga Khan Network. The World Bank's "Emergency Community Empowerment and Public Work's Project" triggered economic development and strengthened governance at the community level by channelling grants through community councils which planned and managed small reconstruction and development projects. For more information see The World Bank, "Afghanistan: Status of Projects", [online] Available at: http://www.worldbank.org.af/WBSITE/EXTERNAL/COUNTRIES/SOUTHASIAEXT/AFGHANISTANEXTN/0,,contentMDK:20143800~menuPK:347173~pagePK:141137~piPK:141127~theSitePK:305985,00.html#nsp

[26] With the support of international development experts, those villagers engaged to be laboratory technicians would then receive extensive training in the transformation of raw poppy materials into finished medicines. With the support of the Afghan National Army, those villagers engaged to be security guards would then receive extensive training in security.

from which the medicines would be manufactured, those villagers engaged as project farmers would be using their own land for the benefit of the entire village. As such, the *shura* would also need to decide whether project farmers would receive additional payments for the use of their land and/or the quantity and quality of the raw poppy materials produced by the farmer.

3.5 Set project's annual timeline

Using its unique insights into a project village's agricultural and economic cycles, the *shura* would also determine the precise timing of the production of poppy-based medicines, in terms of cultivation, harvest, transformation period.[27] In consultation with village farmers, the *shura* would decide on the necessary agricultural inputs for the project and the optimal planting period, and would generate initial estimates as to the timing of the harvest and potential yield.[28] In conjunction with international development experts, these estimates would then be used to develop initial models and plans for economic diversification.

[27] A recent case study of India's experiences of licensing poppy cultivation for the production of medicines provides a detailed description of the licensed poppy cultivation cycle and timeline. See Romesh Bhattacharji, "Case Study: India's experiences in licensing poppy cultivation for the production of essential medicines – lessons for Afghanistan," June 2007, [online] Available at: http://www.senliscouncil.net/modules/publications/021_publication

[28] According to the UNODC, the exact timing of the opium poppy harvest is determined by the variety of the opium poppy cultivated, the time of sowing and most importantly climatic conditions in the district. Consequently, the timing of the harvest in any one district may differ by a number of days from one year to the next. For instance, the harvest in Nawzad, Helmand Province was reported to begin ten days earlier in 1999 than it had in the previous year due to particularly warm weather. From UNODC, "Access to Labour: The role of opium in the livelihood strategies of itinerant harvesters working in Helmand province, Afghanistan", Strategic Study #4, June 1999, [online] Available at: http://www.unodc.org/pakistan/en/report_1999-06-30_1_page005.html#H

4. Controlling each project phase: policing responsibilities and penalties

4.1 Project participant engagement phase

Following nomination by the local *shura,* the selection and engagement of the active participants in a *Poppy for Medicine* project would be documented by representatives from Afghan state institutions, to provide official administrative oversight of the project. Once engaged, the Afghan National Police would support the *shura* in the training of these participants in any necessary additional security measures. This support from external security actors would ensure their visual familiarity with project participants, thereby enhancing the external security supporters' capacity to assist the village in its exclusion of non-project participants from secure project zones.

4.2 Cultivation phase

Throughout the cultivation phase, the project village *shura* would distribute agricultural inputs to project farmers, and ensure that the seeds are sown only on project land. As part of a poppy licensing system's legal requirements, relevant Afghan government monitors would measure and document this project land. Following germination of the seeds, the *shura* would supervise the destruction of excess seedlings, to ensure they are not re-planted on non-project land. Throughout the cultivation phase the *shura* would monitor the ongoing inputs necessary to limit crop losses through disease and environmental effects.

Penalties for cultivation phase offences

- Attempts by project participants to relocate excess seedlings to non-project land will be recorded by Afghan government administrators, and penalised accordingly by the *shura.*
- Attempts by drug traders to disrupt the project will be monitored and dealt with by the *shura* with the support of the Afghan National Police.

During the cultivation phase, Afghan government administrators would use the *shura's* knowledge of project villagers' agricultural outputs to implement an anti-diversion measure used in the Indian *Poppy for Medicine* system, known as the Minimum Qualifying Yield.[29] This would involve recording the *shura*'s estimates of project farmers' eventual yields of raw poppy

[29] The Minimum Qualifying Yield (MQY) is a very important diversion-prevention measure. The MQY is the minimum yield of raw poppy materials that a licence-holder must produce each harvest, or risk severe penalties, including the loss of his or her license. The MQY is set according to historical

materials. A failure on the part of farmers to then deliver this minimum estimated yield at harvest time would indicate possible diversion, leaving the farmer open to sanctions.

The policing of the cultivation phase by the *shura* and Afghan government administrators would be further enhanced through the integrated support from the Afghan National Police, who would monitor at the district level any 'outside' interest in the projects, pre-empting possible spoilers. In the final months of the cultivation phase, this external security support would be gradually built up to provide targeted security of the individual project villages as the crop matures. However, the primary safeguard against drug traffickers would be the villagers in a *Poppy for Medicine* project. Field research findings clearly show that the specific elements that comprise Afghan local social control systems are extremely active in protecting the best interests of their communities. If an activity, such as *Poppy for Medicine* projects, is in a community's interest, the village community is completely willing and able to close ranks to secure the project against the influence of outsiders such as the Taliban, insurgents, or drug traffickers.

4.3 Harvest phase

In terms of project security, the harvest period would be one of the most important phases in a *Poppy for Medicine* project. As such, all decisions and actions taken during this phase would need to be made under the supervision of external security supporters, and in consultation with all project stakeholders. The *shura,* in consultation with the project farmers and external security support would decide when to begin the harvest, would take delivery of and document the daily harvest, supervise the inspection of harvest workers at the end of each harvest day, and in conjunction with external security

Penalties for harvest phase offences

- Attempted diversion by harvest workers will be treated extremely severely: the village project would lose its *Poppy for Medicine* licence
- Further, offenders would face a range of penalties from both the *shura* and the counter-narcotics authorities. To ensure respect for human rights, for project evaluation purposes, the application of these penalties would be documented by external monitors.
- Inexplicable failures to meet estimated final yields would be penalised as diversion.

yield levels. The MQY is set at a level that leaves no excess harvest for the licensee to divert into the illegal market. These estimates would need to be adjusted throughout the cultivation phase to take account of environmental factors which would impact on eventual yields of raw poppy materials.

support, the *shura* would secure the harvest in special storage facilities. To facilitate the physical security of the project village, the *shura* would also share villagers' ongoing reports of non-project participants and potential spoilers in the vicinity of the project village with external security supporters.

Poppy harvests in Afghanistan are relatively small (35-40 kg per hectare), and all farmers and villagers know from experience exactly how much can be harvested each day. With the harvest securely stored each day in clearly labelled, measurable containers, the *shura* and Afghan government monitors would be able to keep careful track of the precise harvests collected each day, from the field to the medicine laboratory.

4.4 Medicine production phase

The transformation of raw poppy materials into finished medicines would be another key phase in a *Poppy for Medicine* project. Careful documentation and supervision from trained project participants, in conjunction with central and district government administrators, would track the entire harvest to prevent diversion and to ensure that the medicines would not be further transformed into illegal drugs.

Penalties for medicine production phase offences

- Any disruption of the medicine production process, intentional or otherwise by project participants will be penalised by the *shura*, and any attempted or actual disruption of the medicine production process by non-project participants will be prosecuted under the Afghan counter-narcotics laws.
- Attempted diversion by laboratory workers will be treated extremely seriously, and offenders will face a range of penalties from both the *shura* and the counter-narcotics authorities.
- Failure to provide documentary evidence that the entire harvest, as received daily from the *shura* throughout the harvest phase is processed into medicines will be treated as diversion.
- Failures to meet medicine manufacturing quality control standards will be prosecuted under Health regulations.

The process necessary to transform raw poppy materials into finished medicines would begin during the harvest period, during which trained project participants within the individual project villages would dry the daily harvest of raw poppy

materials.[30] These dried materials would then be tested within the village for morphine content, the result of which would determine payment to farmers.

With the support of external security actors, project villages would then securely transport their dried, tested raw materials to the district processing facility for transformation into medicines. The morphine content of these raw materials would then be tested again, and the results documented by government administrators.[31] Under the supervision of pharmaceutical experts, the raw materials would then be processed into morphine medicines, and the entire production process would be subject to stringent quality control tests, administered with the support of experts supplied by international development agencies. The complete physical security of the district processing facility would be ensured through security support from the Afghan National Police.

4.5 Sale and export of medicines phase

Coordinated by the representatives from individual project villages managing the district processing facility, the finished medicines would then be sold directly from the district processing facility to the district branch of the Committee for Drug Regulation, on behalf of the Afghan government. Building on its records of a village's medicine production output, these Afghan government administrators would verify the full purchase of all medicines manufactured in a village during one project cycle. With support from the Afghan National Police, district's participating security guards would then securely transport the purchased medicines to Kabul by road or by air for local use in Afghan hospitals and as an international export commodity.

Penalties for sale and delivery phase offences

- With all locally-produced medicines to be sold to the Afghan government, a failure for sales documentation to match production documentation will be prosecuted as diversion by the Afghan government.
- Upon delivery, the failure of delivery documents to match sales documents will be prosecuted as diversion by the Afghan government.
- Attempted or actual interruption of the delivery process will be prosecuted as diversion and theft under Afghan counter-narcotics and criminal laws.

[30] Raw poppy materials can be dried to the consistency required for medicine manufacture within 4-5 days. During the day, the raw materials are exposed to direct sunlight in special trays, and stirred continuously. The trays are then stored securely at night.

[31] Indicating the quantity of finished morphine medicines that a project village's raw materials would yield, this test result would form the basis of a transformation contract between the individual project village's formal business entity and the district processing facility.

4.6 Receipt of medicine revenues, and economic diversification phases

Representatives from the individual project villages in charge of managing the district processing facility would take receipt of payments for the district-produced medicines from the Afghan government. Dispersal of these payments to each project village would be made according to the quantity and quality of medicines produced from an individual village-based *Poppy for Medicine* project's raw materials.[32]

Individual project *shuras* would then oversee the dispersal of this payment to individual project participants, according to the payment parameters set out during the project planning phase (see Part A1, section 3.1), and would channel a proportion of these revenues into a special village fund for economic diversification. In this way, the *shura* would begin to discharge its co-guarantor duty to ensure that *Poppy for Medicine* projects result in economic diversification. With the support of external development experts from international development agencies, and documented by Afghan government administrators, the *shura* would identify, select, and arrange the funding and implementation of village-level economic diversification projects. Also with the support of external development experts, the *shura* would advance micro-loans to project participants to fund individual economic diversification activities.

4.7 Evaluation phase

At the end of each *Poppy for Medicine* project production cycle, the entire project would be evaluated. As well as evaluating individual project participants' involvement in the project, the *shura* would evaluate the quantitative evolution of sales, losses and profit as well as the profitability ratios, with the support of international development experts. These would be used to assess the economic impact of the project. The Afghan National Police would be required to provide an evaluation of its involvement in the project, and to generate security-related recommendations. The Afghan government would assess the capacity of the *Integrated*

Offences identified during evaluation phase

- Any offences by members of the Afghan National Police committed while controlling a *Poppy for Medicine* project and identified in evaluation would be prosecuted under Afghan counter-narcotics and criminal law.

[32] Throughout the medicine production process, individual *Poppy for Medicine* project villages would retain legal ownership of the raw materials produced by that project village, and the medicines they yield.

Control System to secure the project throughout each phase, and would generate overall recommendations to enhance the capacity of *Poppy for Medicine* projects to rein in illegal poppy cultivation.

Summary: Integrated Control of *Poppy for Medicine* projects				
Project Phases and Control actors	***Shura***	**Afghan government**	**Afghan National Police and local power-holders**	**International Development Experts**
1. Planning	***Primary control***	***Secondary control***	***Tertiary control***	***Tertiary control***
	▪ Select project format; ▪ Decide on accrual and dispersal of profits to project participants; ▪ Define project roles; ▪ Establish project timeline	▪ Document *shura's* planning decisions	▪ Provide advice to *shura* regarding project security roles; ▪ Develop project security guidelines	▪ Provide advice to *shura* regarding project format and project roles; ▪ Develop economic diversification guidelines
2. Engagement of project participants	***Primary control***	***Secondary control***	***Tertiary control***	***Tertiary control***
	▪ Receive nominations of potential project participants; ▪ Engagement based on aptitude and character	▪ Supervise engagement process; ▪ Exclude known and potential spoilers based on known criteria	▪ Provide additional security guards ▪ Train project participants in security procedures	▪ Train project participants in medicine manufacturing procedures
3. Cultivation	***Primary control***	***Secondary control***	***Tertiary control***	***Tertiary control***
	▪ Distribute agricultural inputs; ▪ Supervise planting of seeds ▪ Monitor ongoing agricultural inputs needs	▪ Measure and document project fields ▪ Record *Shura's* estimates of final yield	▪ Supervise access to project fields ▪ Monitor 'outside' interest in project	▪ Provide advice on agricultural inputs to enhance final yield ▪ Develop economic models based on estimated final yields
4. Harvest	***Secondary control***	***Tertiary control***	***Primary control***	***Tertiary control***
	▪ Decide to begin harvest ▪ Supervise inspection of harvest workers ▪ Take delivery of and secure daily harvest	▪ Document daily harvest ▪ Document preparation of daily harvest for transformation ▪ Document final harvest yield	▪ Monitor and inspect harvest workers ▪ Maintain security of project fields ▪ Secure the drying process	▪ Provide experts to assist in quality control of the drying of daily harvest in preparation for transformation into medicines
5. Medicine production	***Secondary control***	***Tertiary control***	***Secondary control***	***Primary control***
	▪ Provide supervisors to district processing facility to inspect medicine manufacturing workers	▪ Document medicine manufacturing process	▪ Secure medicine production laboratory	▪ Provide experts to assist in quality control of medicine manufacturing process
6. Sale and delivery of medicine	***Secondary control***	***Secondary control***	***Primary control***	***Tertiary control***
	▪ Provide to district processing facilities with	▪ Purchase medicines on behalf of Afghan	▪ Secure delivery of medicines to Afghan	▪ Adjust economic diversification model based on

	representatives to coordinate the sale of medicines to Afghan government on behalf of project village	government ▪ Document reception of medicines	government	final medicine sales
7. Dispersal of medicine sales revenues and economic diversification	***Primary control*** ▪ Disperse revenues to project participants ▪ Select and fund village-level economic diversification projects	***Tertiary control*** ▪ Document payments to project participants ▪ Document economic diversification process	***Tertiary control*** ▪ Secure dispersal of project revenues to participants ▪ Secure implementation of economic diversification projects	***Secondary control*** ▪ Provide advice on payments to project participants ▪ Provide advice on economic diversification projects
8. Evaluation	***Secondary control*** ▪ Evaluate project participants' involvement; ▪ Discuss recommendations	***Primary control*** ▪ Evaluate each project phase; ▪ Evaluate Integrated Control System; ▪ Generate overall recommendations	***Tertiary control*** ▪ Evaluate involvement in project; ▪ Generate security-related recommendations	***Secondary control*** ▪ Evaluate economic impact of project; ▪ Generate recommendations

Part A2

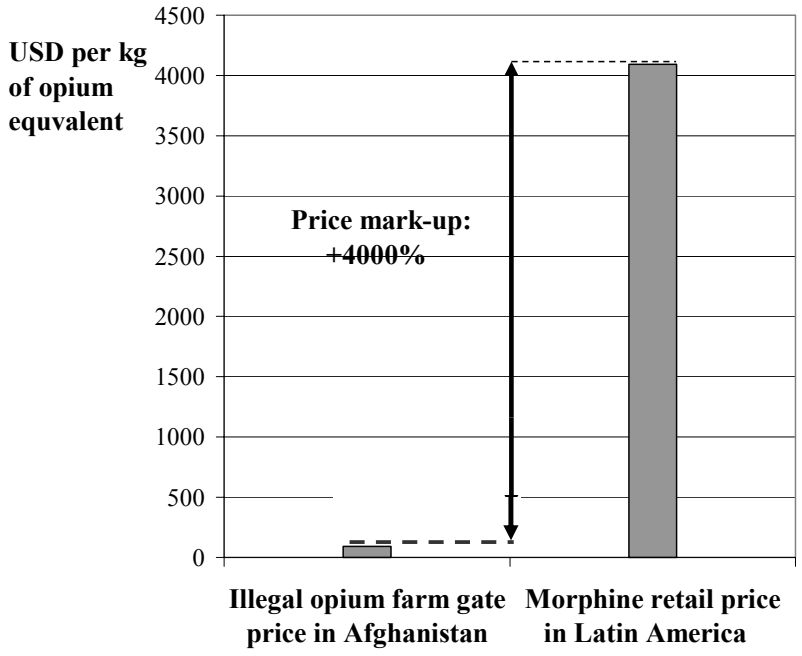
Bringing economic development at the village level

A2 Bringing economic development at the village level

Summary

The local production of finished poppy-based medicines in *Poppy for Medicine* project villages would represent for project participants an increase in the village's total revenue, and a move up the poppy value chain. This makes the business model of the *Poppy for Medicine* projects essentially different from both the illegal and the Indian legal opium systems, in which the farmers sell raw opium at the farm gate, having added very little added value. The local production of medicines under a licensed *Poppy for Medicines* project would ensure that Afghan farming communities truly benefit from the mark-up between the production costs and retail prices of morphine.

Figure 1: Price mark-up between raw poppy materials and finished medicines



The local processing of raw poppy material into finished poppy-based medicines such as morphine would bring enough additional value to farming communities to provide incentives for these communities to switch from illegal cultivation to participation in a *Poppy for Medicine* project. Moreover, the significant economic benefits generated by the local production and sale of medicines would be sufficient to accommodate all local stakeholders, including middle-men and local power-holders. In conjunction with law enforcement efforts, economic independence would allow farmers to cut their links with major drug traffickers.

Redistributing the profits from sales of medicines in ways similar to those used in fair trade initiatives, the business model of the *Poppy for Medicines* project is economically viable. Afghan village based projects could provide reliable poppy-based medicines to emerging countries well below their current market price, thus contributing to an easing of the global pain crisis.

Poppy for Medicine projects are the key to surpassing Afghanistan's reliance on illegal poppy cultivation. The sales of locally-produced medicines would generate significant revenues, enabling economic development through direct investment and microfinance services. The local production of morphine medicines would also benefit the Afghan government, enhancing its capacity to strengthen the rule of law and provide public services, further improving the economic climate. In turn, economic diversification and expansion would ultimately make possible the sustainable phasing out of poppy cultivation.

1. The economics of *Poppy for Medicine* Projects: production and sale of medicines

In a country where forty percent of the population is unemployed and Gross Domestic Product stands at just USD 335 per capita,[33] increasing the availability of sustainable, legal incomes remains a key factor in enhancing rural communities' access to economic opportunities beyond subsistence farming.

1.1 Cash benefits accrued through *Poppy for Medicine* projects competitive with illegal Afghan opium market

By leveraging Afghan farming communities' existing assets of strong social control and poppy farming expertise to locally produce simple poppy-based medicines such as morphine, *Poppy for Medicine* projects allow these communities to bring the inherent potential value of poppy back to the village. Benefiting from the economic mark-up between the production costs and retail prices of morphine (more than 4,000%), sales of these medicines to the Afghan government would result in cash benefits that are competitive with those offered under both the current illegal market for opium, and the standard daily labour rates in Afghanistan.[34]

Table 1: Net incomes of *Poppy for Medicine* project participants

Occupation	Current net incomes in Afghanistan		Net incomes of P4M project participants	
	USD	AFN	USD	AFN
Poppy farmer (per season)	450	22,185	917	45,900
Poppy harvester (per day)	7.6	375	8	395
Security guard (per day)	3-15	148-740	8	395
Laboratory worker (per month)	350	17,280	400	19,850

[33] International Monetary Fund, Report for Afghanistan, "Estimate for 2007", [online] Available at: http://www.imf.org/external/pubs/ft/weo/2007/01/data/weorept.aspx?pr.x=40&pr.y=8&sy=2004&ey=2008&scsm=1&ssd=1&sort=country&ds=.&br=1&c=512&s=NGDPDPC,PPPEX&grp=0&a=

[34] In the illegal opium market, farmers' net income from poppy represents just 15-30% of the so-called "farm-gate" price. Further, current farm-gate prices, as reported in the United Nations Office for Drugs and Crime Afghanistan Opium Surveys, are now decreasing again.

Farm gate price of raw poppy materials in Afghanistan, per kilogram

Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
USD	30	23	24	34	33	40	28	301	250	283	92	102	94

1.2 Afghan-made morphine would be sold internationally at affordable prices

The vast un-met need for painkilling medicines in most countries illustrates that a guaranteed market exists for Afghan-made essential pain medicines.[35] The cost of producing morphine in Afghanistan would be low enough that the Afghan government could sell the medicines to individual states at accessible prices, thereby allowing those states to respond to their country's un-met pain needs.[36]

Poppy for Medicine project clusters would sell their locally-produced morphine to the Afghan government for USD 3,100 per kilo. These medicines would then need to be packaged to meet the international regulatory requirements for the export of poppy-based medicines. By selling the morphine to other states for USD 4,300 per kilo,[37] the Afghan government would not only recover these international compliance costs, it would gain direct financial benefits from *Poppy for Medicine* projects.

Afghan National Pharma Company: International Morphine Traders

In support of *Poppy for Medicine* projects the Afghan government could establish a corporate entity to facilitate its international trade in locally-produced medicines. A state-owned pharmaceutical company could be made responsible for the purchase and packaging of locally-produced morphine. After providing for certification and export compliance requirements, this national pharmaceutical company could sell the Afghan locally-produced morphine at profit to other states, thereby ensuring that the Afghan government receives direct financial benefits from *Poppy for Medicine* projects.[38]

[35] For an in-depth examination of the extent of this market, see Part B2.
[36] The World Health Organisation has noted that patients' access to essential painkilling medicines is highly dependent on affordability. See Scholten, Willem, Access to Controlled Medications Programme, World Health Organisation Briefing Note, March 2007.
[37] The mark-up between the Afghan government's purchase and export sales price of the morphine would cover special packaging costs and labelling requirements. Some states have particularly high regulatory costs and taxes, which could nearly double the price of the Afghan-made morphine (for example the cost of importing one kilo of Afghan-made morphine into Brazil would cost the Brazilian government USD 7,700 per kilo). However, even with these high import costs, Afghan-made morphine would still be able to be sold at affordable prices significantly below the market average.
[38] For further discussion of the ways in which Afghan-made morphine would be sold on the international market, see section B3 and B4.

Bringing the value of poppy to the villages: Case study *Poppy for Medicine* project

This case study provides a strictly hypothetical description of an individual village-based *Poppy for Medicine* project, to shed light on the project model. Although all the figures would need to be carefully reassessed for a smaller Pilot Project or larger village project, nevertheless, the case study provides interesting insights and allows conclusions to be drawn regarding the potential economic impact of a *Poppy for Medicine* project.

In a hypothetical *Poppy for Medicine* project village, poppy would be cultivated on twenty-five small licensed farms of 0.37 hectares, or two *jeribs*, each.[39] Sown in autumn, the crops would be ready for harvest by project field workers the following spring. Comprising a total of 9.25 hectares, the twenty-five farms would together yield a total of at least 340 kg of raw poppy materials over the three-week harvest period. At the end of each day, the day's harvest would be collected and brought to the project village's storage facility, to be documented and tested for morphine content.[40] Throughout the harvest period, trained project workers would begin the medicine production process by drying the raw poppy materials.[41] This initial transformation step would yield around 310 kg of semi-processed raw poppy materials.

These semi-processed raw materials would then be securely transported to the well-equipped district processing facility and transformed into morphine by professional pharmaceutical chemists, with the support of project participants trained as laboratory workers.[42] The morphine would then be further processed into 10 mg tablets at the district processing facility.

[39] In Afghanistan, a jerib is a standard land area unit corresponding to 0.185 hectares, or 1,850 square metres. According to the United Nations Office for Drugs and Crime, the average Afghan poppy farm is two jeribs, or 0.37 hectares in size.

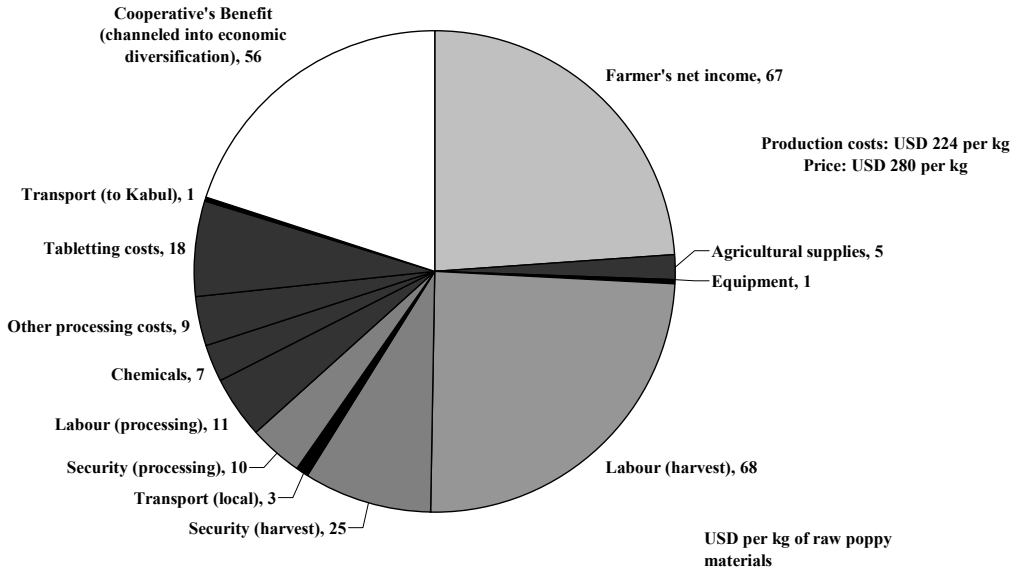
[40] Each farmer's daily harvest would be weighed in front of him and kept in a separate labelled container. The price ultimately paid to each farmer for his harvest will be calculated with regards to the morphine content of his poppies.

[41] Each batch would dry in the sun for 4-5 days. Drying trays would be kept at the storage facility at night, and taken outside or on the roof for drying by day.

[42] The entire process will comply with the principles of Good Manufacturing Practice as endorsed by the WHO. Quality tests will be performed by qualified staff on the incoming raw poppy material and throughout the process, along with purity tests. Quality control equipment will notably entail a thin

In total, approximately 30 kg of morphine would be transformed in morphine tablets in a single hypothetical *Poppy for Medicine* project,[43] for a total production cost of USD 76,000. More than two thirds of these costs would be recycled back into the local economy. After further quality control tests, the finished medicines would then be sold to the Afghan government for a total of USD 96,000, bringing the hypothetical village project a net profit of USD 20,000 to invest in local economic diversification projects.[44]

Figure 2: Local level costs and revenues



The locally produced morphine would be securely transported to Kabul, where the Afghan government would prepare the medicines for international export, possibly through a special state-owned Afghan National Pharma Company. The packaged and

layer chromatography system, high performance liquid chromatography equipment and a spectrophotometer.

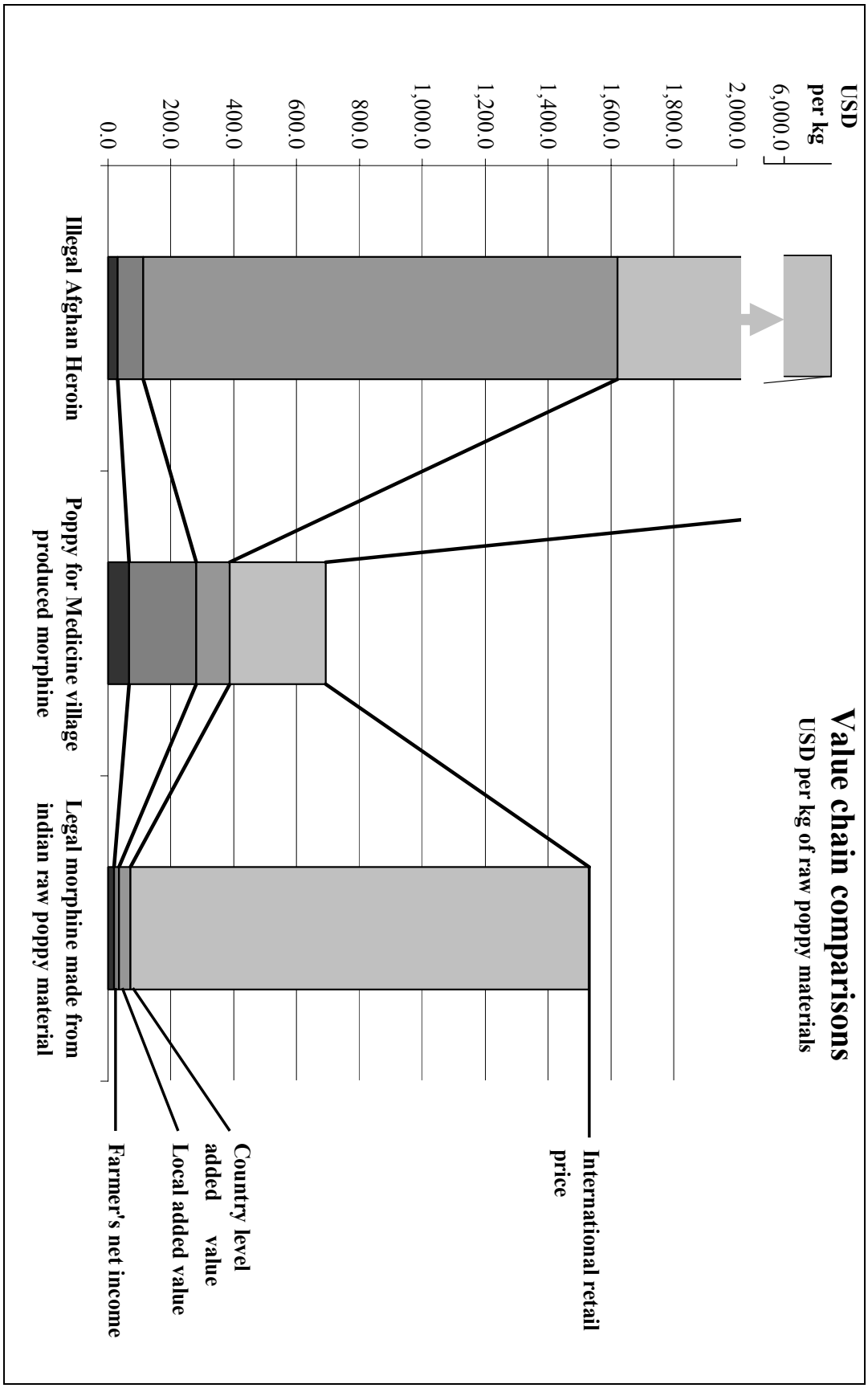
[43] The cooperative association would retain ownership over its input throughout the processing at the project medicine laboratory. After the sale of the medicines, each cooperative association would pay a fee to the project medicine laboratory for its processing and trading services.

[44] This does not include the payment made to farmers for their harvest. It is estimated that farmers would receive an average of USD 140 per kg of raw poppy material provided, depending on the morphine content.

labelled medicines would then be exported at a price of USD 3,800 per kg of morphine to a country with extensive morphine needs, such as Brazil.[45]

Transport and export costs to Brazil, including all taxes and duties, can represent as much as 80% of the value of finished morphine based medicines. However, medicines imported for a Brazilian public institution are exempted of most of the import duties. A conservative assumption that the full range of costs and taxes apply brings the price of Afghan made medicine morphine exported to Brazil to USD 7,700 per kg, or USD 7.7 per gram. After including distribution costs, it is likely that one gram of Afghan-made morphine would cost the Brazil government less than USD 10 [representing a hundred 10 mg doses], well below the Brazilian market price of USD 49.5. A *Poppy for Medicine* project would provide affordable medicines to guaranteed markets, and in doing so, would help to respond to a largely un-met need.

[45] The finished and packaged medicines would be checked in accordance with the rules of Good Manufacturing Practice and would match the international quality requirements.


Value chain comparisons
USD per kg of raw poppy materials
USD per kg
6,000.0
2,000.0
1,800.0
1,600.0
1,400.0
1,200.0
1,000.0
800.0
600.0
400.0
200.0
0.0
Illegal Afghan Heroin
Poppy for Medicine village produced morphine
Legal morphine made from indian raw poppy material
International retail price
Country level added value
Local added value
Farmer's net income

2. The economic vehicle of *Poppy for Medicine* projects: cooperative associations

As explained in Part A1 describing the *Integrated Control System*, for economic, security, and sociological reasons, individual *Poppy for Medicine* projects should be implemented in Afghan villages, with several individual projects clustered together in a single district.

2.1 Cooperative medicine production systems most efficient model for Afghan village-level *Poppy for Medicine* projects

In rural Afghan villages, the most economically efficient way of producing medicines would be to group the community's relevant resources in a cooperative model. Cooperative production systems allow for the pooling of human and agricultural resources for the collective purchase of additional inputs necessary to produce value-added products, and for the fair redistribution of the profits on the sales of these products. [46]

2.2 How would a cooperative association work in a *Poppy for Medicine* project?

During the planning phase of a *Poppy for Medicine* project, a village *shura* would establish a cooperative association as a formal business entity, its membership comprising all active project participants.[47] This cooperative association would provide both a formal structure through which a community's human and agricultural resources could be pooled to enable the production of added-value poppy-based medicines, as well as a transparent means of recycling profits from medicine sales into economic diversification activities to benefit the wider community.

As a locally owned and operated entity, the cooperative association would be regulated and controlled by the project village *shura*. In exercising social control of *Poppy for Medicine* project participants, the *shura* would effectively underwrite the

[46] Around the world, producers' associations and farmers' cooperatives are used to manufacture "value-added" agricultural products. Such value-adding cooperative models have proved to be successful both in developed countries - wine cooperatives in France - and in transitional economies, for example dairy cooperatives in India, and wood carving handicraft cooperatives in Kenya.
[47] See Part A1 section 3 for further discussion of this formal business entity.

cooperative association's capacity to contribute to the secure local manufacturing of poppy-based medicines. In turn, by facilitating the production and sale of medicines, the cooperative association would bring significant value to the *shura*-governed village, thereby providing sufficient incentives to the *shura* to exercise its social control capacities over project participants, guaranteeing the village's collective committed participation in the *Poppy for Medicine* projects.

Co-guaranteed local production of poppy-based medicines		
	Village Cooperative Association	**Village *shura***
Planning phase	▪ Receive licence to cultivate poppy for the production of medicines from the Afghan government	▪ Guarantee the Cooperative Association's compliance with the licence provisions[48]
	▪ Engage project participants as temporary employees of Village Cooperative Association	▪ Select villagers for engagement as project participants
	▪ Establish a payment system for project participants	▪ Decide on payment system for project participants[49]
	▪ Establish fund for diversification ▪ Develop plans for recycling revenues from medicine sales into economic diversification	▪ Develop economic diversification plans ▪ Decide on criteria for micro-loans for individual economic diversification
Production phase	▪ Purchase inputs necessary for medicine production	▪ Supervise distribution of agricultural inputs to project participants
	▪ Arrange and fund the necessary training of project participants	
	▪ Coordinate the local production of poppy-based medicines	▪ Control and secure the medicine production processes
Sale phase	▪ Coordinate sales of medicines to the Afghan government	▪ Secure export process from village to ensure full delivery of medicines and thus full payment
	▪ Receive payment for medicines ▪ Distribute payments to project participants	▪ Ensure project participants are fairly paid according to the agreed payment system; ▪ Impose any necessary fines
	▪ Channel remaining revenues into fund for economic diversification	▪ Ensure all remaining revenue is channelled into economic diversification fund
Diversification phase	▪ Fund community-level economic diversification projects	▪ Select community-level diversification projects
	▪ Provide micro-finance to villagers for individual economic diversification projects	▪ Arrange co-guarantor relationships between borrowers of micro-loans

During the implementation phase of a *Poppy for Medicine* project, the cooperative association would receive a licence to coordinate the cultivation of poppy for the

[48] The Afghan government makes legal provision for the possibility of licensing opium production. See Islamic Republic of Afghanistan, "Counter Narcotics Law", Article 7, paragraph 3, [online] Available at: http://www.mcn.gov.af/eng/downloads/documents/drug_law.pdf.
[49] For further discussion of this, see section A1, section 3.3

production of medicines. The cooperative association would then engage *shura*-selected project participants, and would purchase project farmers' poppy harvests through systems similar to those employed in French wine cooperatives.[50] The cooperative association would arrange for the local production of medicines from the village-produced poppy materials, for sale to the Afghan government. The cooperative association would then channel the revenues from medicines sales back to the project participants and into the community through *shura*-approved economic diversification plans and projects.

Shura regulates the cooperative association
As the primary institution of control in *Poppy for Medicine* projects, a project village's *shura* would provide regulatory guidance to the local cooperative association. This would facilitate transparency, providing a further layer of security to ensure revenues from the projects are properly channelled into economic diversification. The *shura* would identify and fund specific projects which would benefit the economic diversification activities of the community as a whole.

2.3 Cooperative association provides economic infrastructure for diversification, and a conduit for international development assistance

In controlling the revenues from sales of locally produced medicines on behalf of project participants, a cooperative association would provide the economic infrastructure necessary to fund the controlled diversification of a project community's economic activities. To maximise the economic impact of *Poppy for Medicine* projects, international development experts would assist the cooperative association in the development of plans and models for economic diversification. Further, through the project cooperative association, representatives and experts from the international community's development agencies would provide the necessary training of project participants to enable the production of medicines.

P4M Benefit: Economic Infrastructure
The establishment of a cooperative association would provide *Poppy for Medicine* project communities with a locally owned and operated formal economic infrastructure through which future business–related activities can be developed and enhanced.

[50] The cooperative association would purchase crops directly from the project farmers, who would then pay their sub-contracted local harvesters. These sub-contractor harvesters would need to be approved by the *shura*, to maintain local *shura* control of project participants, and may be project farmers' family members.

Summary: Economic development through local production of poppy-based medicines					
	Village *shura*	**Village Cooperative Association**	**District processing facility**	**Afghan government representatives**	**International development Agency experts**
Planning phase	▪ Guarantee the Cooperative Association's compliance with the license provisions	▪ Receive license to cultivate poppy for the production of medicines from the Afghan government	▪ Receive license to manufacture medicines	▪ Provide licenses to village cooperative association and to district processing facility	
	▪ Select villagers for engagement as project participants	▪ Engage project participants as temporary employees	▪ Engage laboratory workers	▪ Document project participants	
	▪ Decide on payment system for project participants	▪ Establish a payment system for project participants		▪ Conclude special trade agreements with foreign states	▪ Provide advice on payment systems
	▪ Develop economic diversification plans ▪ Decide on criteria for micro-loans for individual economic diversification	▪ Establish fund for economic diversification ▪ Develop plans for recycling revenues from medicine sales into economic diversification			▪ Provide advice to *shura* on economic development and diversification plans
Production phase	▪ Supervise distribution of agricultural inputs to project participants	▪ Purchase inputs necessary for agricultural production	▪ Purchase inputs necessary for medicine production		
		▪ Arrange and fund the training of project participants	▪ Provide training to tablet making workers		▪ Provide additional medicine production training
	▪ Control and secure the medicine production processes	▪ Test and dries raw poppy materials	▪ Produce poppy-based medicines	▪ Document medicine production	▪ Provide quality control in medicine production process
Sales and delivery phase	▪ Secure export process from village to ensure full delivery of harvest and thus full payment		▪ Arrange sales of medicines to the Afghan government	▪ Purchase locally-produced medicines ▪ Package medicines for resale to foreign states	
	▪ Ensure project participants are fairly paid according to the agreed payment system; ▪ Impose any necessary fines	▪ Compensate farmers and other project participants for their input	▪ Receive payment for medicines ▪ Distribute payments to village cooperative associations		
	▪ Ensure all remaining revenue is channelled into economic diversification fund	▪ Channel remaining revenues into fund for economic diversification			

Diversi-fication phase	▪ Select community-level diversification projects	▪ Fund community-level economic diversification projects			▪ Provide advice to *shura* on implementation of community-level projects
	▪ Arrange co-guarantor relationships between borrowers of micro-loans	▪ Provide micro-finance to villagers for individual economic diversification projects			▪ Provide advice to villagers on individual diversification projects

3. Economic Diversification through *Poppy for Medicine* projects

A diversified local economy is the key to longer term, sustainable development and lasting security in Afghanistan. Currently, illegal poppy cultivation is a necessity for many farmers, not a choice: farmers are exposed to risks most would never willingly undertake, if given viable economic alternatives. As such, progressive economic diversification is ultimately in the interest of Afghan farming communities, representing an opportunity to move into less risky and more lucrative economic activities. A cornerstone of the *Poppy for Medicine* projects initiative is ensuring that this economic diversification takes place.

3.1 Compulsory Economic Diversification a key element in *Poppy for Medicine* counter-narcotics model

Poppy for Medicine projects would help to end Afghan farming communities' reliance on illegal poppy cultivation, by providing them with access to the strategic assets necessary to sustainably diversify their economic activities. The strategic assets to which *Poppy for Medicine* project communities would have access include competitive legal incomes from employment as project participants; expert development advice from the representatives of international development agencies included in the project's *Integrated Control System*; and the economic infrastructure established by the project's cooperative association. This economic infrastructure would include a fund for economic diversification, established during the project planning phase.

These strategic assets would provide project communities with two complementary routes to phasing out their reliance on poppy: direct investment in community-level development projects; and indirect investment in individual community members' economic diversification activities.

A community development project
One of the most important principles in the increasingly important concept of "fair trade" is the use of part of the profits from fairly traded goods for the improvement of the local socio-economic situation. By making Afghan-made morphine available to foreign states at accessible prices, and by providing for the funding of projects that improve the project community's socio-economic situation, *Poppy for Medicine* projects share a number of similarities with other fair trade community development projects.

Direct investment in community-level diversification projects

During the planning phase of a *Poppy for Medicine* project, the *shura* would allocate a proportion of the future revenues from sales of locally-produced medicines to be channelled into development projects for the benefit of the entire village.[51] During the diversification phase of the project, the *shura* would fund community-level projects to facilitate the diversification of the community's business opportunities. For example, the *shura* could use the diversification fund to invest in a pump to improve irrigation to the whole village, allowing locals to begin cultivating more water-intensive crops. The *shura* could also invest in the development of non-agricultural industries, or even in infrastructure that would enable the addition of value to other locally-produced agricultural products.

Microcredit for individual economic diversification activities

As well funding community-level diversification-enabling projects, the project diversification fund would be used to grant small microcredit loans to finance individual villagers' efforts to diversify their economic activities. Microfinance is a sustainable and cost-effective way for *Poppy for Medicine* projects to fund local entrepreneurial initiatives to increase local prosperity and economic diversity.[52] To access microcredit from the economic diversification fund, entrepreneurs would need to first establish a co-guarantor relationship with another village member, and then prove to the *shura* their capacity to successfully develop their new economic activity, and to repay their debt.

P4M project micro-credit criteria
Microcredit is an efficient development tool when used by those who have identified an economic opportunity and simply need access to a small amount of cash to be able to capitalise on that opportunity.

[51] See Part A1, section 3.3 for further discussion of this.
[52] In particular, microcredit - the granting of very small loans to people lacking access to mainstream banking facilities – enables economic diversification by facilitating the establishment of small income-generating non-agricultural businesses.

Part A3

Merits of *Poppy for Medicine* project as an integrated counter-narcotics and counter-insurgency model

A3 Merits of *Poppy for Medicine* project as an integrated counter-narcotics and counter-insurgency model

Summary

Poppy for Medicine projects would promote loyalty to the Afghan government and entrench the rule of law in Afghanistan

Poppy for Medicine projects represent a comprehensive, secure, and pragmatic economic development-orientated response to Afghanistan's opium and security crises. As a counter-narcotics model, *Poppy for Medicine* projects would entrench the rule of law in Afghanistan, and in doing so, enable the Afghan government to extend its capacity to control the rural parts of the country. As a counter-insurgency model, the integration of the capacities of national and international-level security actors with village control systems in the control and security of *Poppy for Medicine* projects, would complement and enhance current efforts to counter the insurgency and stabilise Afghanistan.

Illegal opium trade defeated through Poppy for Medicine-triggered development

Village-based *Poppy for Medicine* projects would enable Afghanistan to defeat the illegal opium trade. Guaranteed to trigger economic development, *Poppy for Medicine* projects would provide rural farming communities with access to the strategic assets necessary to diversify their economic activities and thus end their reliance on illegal poppy cultivation. *Poppy for Medicine* projects would not only allow for the controlled, sustainable phasing out of poppy cultivation, they would generate sufficient incentives for farming communities to cut links with drug traffickers. Interdiction and eradication would thereby be brought to a manageable level, by allowing distinctions to be made between the behaviour of those who cultivate poppy as a survival strategy, and the truly criminal behaviour of drug traffickers.

Poppy for Medicine: an anti-corruption counter-narcotics initiative

The *Poppy for Medicine* project model is designed to respond to the threat of corruption associated with current eradication-based counter-narcotics efforts: integrated local, national and international security resources would be concentrated and targeted during the project phases most vulnerable to corruption. Further, anchored in Afghan villages, *Poppy for Medicine* projects would operate at the most securable and controllable - and least corrupt - level of Afghan society, where the villages community's capacity to socially control the behaviour of its inhabitants, combined with the community's common interest in the economic benefits of the project, would preclude local corruption by project participants.

Countering narcotics by bridging security and development efforts

As a counter-narcotics model, *Poppy for Medicine* projects would bridge current efforts to bring sustainable security and development in Afghanistan. Immediately generating employment, legal incomes and providing access to strategic economic assets, *Poppy for Medicine* projects would provide Afghan communities with both a vision of a viable, positive future worth actively rejecting insecurity for, and the means to achieve this future.

1 Entrenching the rule of law and enhancing loyalty to the Afghan government

1.1 Integrated control system provides total security of *Poppy for Medicine* projects in all circumstances

Premised on the linking and maximising of Afghanistan's existing security and control resources to rein-in illegal poppy cultivation, village-based *Poppy for Medicine* projects would be a comprehensive, secure and pragmatic counter-narcotics response to the country's illegal opium crisis. The existing strong social control systems in Afghan villages are a vital institutional resource for the containment and reduction of illegal poppy cultivation. In the control of a *Poppy for Medicine* project, the integration of external controls with village-based controls would maximise the efficacy of this vital institutional resource.[53]

1.2 Integration of local controls with external security support would build collaborative relationships between rural communities and the ANA

The key benefit of locating *Poppy for Medicine* projects in Afghan villages is that local and external control and monitoring resources would be concentrated and targeted during the project's most critical phases, allowing for complete and total security at all times. Further, by facilitating the construction of working relationships between rural farming communities and the Afghan National Army, the integrated control of *Poppy for Medicine* projects would complement and enhance current efforts to secure and stabilise Afghanistan, by vividly demonstrating the willingness of international security actors working in Afghanistan to win the hearts and minds of Afghan farming communities.

1.3 *Poppy for Medicine* projects would entrench and enrich the rule of law in Afghanistan

The *Integrated Control System* used to secure *Poppy for Medicine* projects would entrench and enrich the rule of law in rural Afghan communities, by enmeshing

[53] Based on proven local control systems as documented in extensive sociological and criminological field research, the village-based *Poppy for Medicine* model can be easily adapted to the specific circumstances of different villages in the different regions of Afghanistan where *Poppy for Medicine* is most needed.

existing local principles and measures of social control with the formal rules and regulations administered by Afghan government representatives for the control of the licensed cultivation of poppy and local transformation of medicine.

1.4 Afghan government's capacity to control and secure the country enhanced through *Poppy for Medicine* projects

Field research in Afghanistan indicates that the country's rural farming communities strongly agree with the Afghan government and the international community on the need to bring illegal poppy cultivation under control. However, the current counter-narcotics policies being pursued in Afghanistan do not necessarily take into account or reflect the needs of the country's farming communities. In comparison, *Poppy for Medicine* projects would have a stabilising 'inkblot' effect on relations between the Afghan government and rural communities. The integrated ways in which *Poppy for Medicine* projects would be secured and controlled, would provide the opportunity for Afghanistan's rural farming communities to forge positive, collaborative relationships with the formal institutions of the Afghan central government, as well as with the representatives of the international community currently working to bring sustainable security to Afghanistan.

1.5 *Poppy for Medicine* projects would increase rural communities' loyalty to the Afghan government

Supported and overseen by the Afghan government, *Poppy for Medicine* projects would allow rural farming communities to switch their 'loyalties' from drug traffickers to the Afghan government, without having to effectively choose to let their families starve. The administrative oversight of *Poppy for Medicine* projects by representatives of the Afghan central government would promote local confidence in formal institutions of governance, by providing a positive reason for the Afghan government's interaction with and presence within rural communities. Those villages running *Poppy for Medicine* projects would serve as examples of positive interaction between the central government and rural Afghanistan.

Given their strong ties to the local communities over which they hold power, the inclusion of local power-holders in the *Poppy for Medicine* projects would not only help secure the projects, but would also help to open a positive dialogue between local

power-holders and the central Afghan government, necessary to extend state support in, and control of rural Afghanistan.

2. Providing the resources and incentives necessary to phase out reliance on poppy

2.1 Bringing interdiction and eradication targets to manageable levels, *Poppy for Medicine* projects would enable Afghanistan to defeat the illegal opium trade

Violence, corruption and crime are associated with the current illegal opium economy. This economy has to be tackled through the use of targeted law enforcement aiming at drug traffickers, salesmen and other middlemen and actors working in the illegal drug trafficking chain. By inducing rural farming communities to cut their links with insurgents and drug traffickers, village-based *Poppy for Medicine*s projects would facilitate the targeting of counter-narcotics resources at those who do not cultivate poppy as a survival strategy.

2.2 *Poppy for Medicine* projects would generate sufficient incentives for project communities to exclude spoilers

The local transformation of poppy into medicine would not only provide the means for rural farming communities to cut their economic links with drug traffickers, it would remove the raw poppy materials from farmers' possession, thereby removing the possibility of maintaining such links with drug traffickers, enabling these communities to live within the law. Further, the revenues generated by *Poppy for Medicine* projects would be extensive enough to not only provide sufficient economic incentives for farming communities to exclude drug traffickers and insurgents, but also allow sufficient room to incorporate the needs of all potential stakeholders in a *Poppy for Medicine* project.

The local addition of value to raw poppy materials sharply differentiates Afghan *Poppy for Medicine* projects from the Indian legal opium business model, under which Indian farmers sell raw opium "at the farm gate" to the Indian government with no added value. The benefits to project participants illustrated in the village-level value chain for morphine also differentiate *Poppy for Medicine* projects from Afghanistan's illegal drug market, under which farmers sell their poppy harvests at the farm gate to drug traders, having added only very little value by drying the crop.

2.3 Embedded diversification measures ensure that reliance on poppy would be phased out

By triggering the economic development necessary to decrease illegal poppy cultivation in Afghanistan, *Poppy for Medicine* projects would provide rural farming communities with access to the funds, development expertise, and economic conditions necessary to phase out poppy cultivation. As well as creating employment and building capacity in Afghanistan's farming communities, *Poppy for Medicine* projects would provide for the compulsory phasing out of poppy cultivation, even for the production of medicines. The economic diversification measures embedded in the *Poppy for Medicine* project model would provide farming communities with both an access to the strategic assets necessary to end their reliance on poppy, and an obligation to do so.

As described in Part A2 of this paper, the revenues from sales of locally-produced medicines would be channelled into economic diversification, through the direct funding of projects for the benefit of the entire community, and the indirect funding, through micro-finance principles, of individual project participants' efforts to diversify their economic activities.

3 Foiling the corruption associated with counter-narcotics efforts

3.1 Local ownership of *Poppy for Medicine* projects prevents corruption

Linked to perceptions of inequity and poverty, corruption has had a severely negative impact on current eradication-based counter-narcotics efforts in Afghanistan. As a counter-narcotics initiative, the *Poppy for Medicine* project model specifically addresses the threat of corruption. Anchored in Afghan villages, *Poppy for Medicine* projects would operate at the most securable and controllable - and least corrupt - level of Afghan society: where a villages' capacity to socially control the behaviour of its inhabitants, combined with the villages' common interest in the economic benefits of the project, would preclude local corruption by project participants.

3.2 Positive collaborative relationships needed to prevent corruption

As outlined in Part A1 section 2 by facilitating the development of collaborative relationships between the Afghan government and rural communities, the integration of existing community-level social control measures and state-level institutions into the process of securing *Poppy for Medicine* projects would strengthen the rule of law and promote good governance. As a comprehensive and positive counter-narcotics initiative based on the even-handed provision of sustainable alternative livelihoods to Afghanistan's farming communities, *Poppy for Medicine* projects would ensure proper remuneration for all stakeholders, addressing the poverty and perception of inequality that fosters corruption.

3.3 Targeted security and control resources secure projects during critical phases

To completely preclude the corruption of a *Poppy for Medicine* project, the integration of local and external control and security resources would be concentrated and targeted during those project phases most vulnerable to corruption.

4 Immediately bridging security and development in Afghanistan

4.1 Engage rural communities in the stabilisation and development of their country

Field research has revealed that most farming communities want to be part of the legal economy, without the pressure and constant threats of drug traffickers and warlords. *Poppy for Medicine* projects would allow rural communities to not only envisage a legal, stable and sustainable economic future worth actively rejecting insecurity for, but also actually achieve this future.

4.2 Counter narcotics by bridging security and development efforts

In Afghanistan, poppy cultivation represents an important survival strategy for millions in Afghanistan's rural farming communities, providing a livelihood but not much more: the majority of Afghanistan's poppy farmers cultivate poppy out of need, not greed. In forcibly removing Afghan farming communities' main cash crop, current forced eradication-based counter-narcotics efforts are contributing to insecurity in the country, as rural communities turn to the Taliban and insurgents to protect their cash crops, thereby compromising the Afghan government and international community's efforts to secure, stabilise, and develop Afghanistan.

It is clear that economic development is the key to successfully and sustainably stabilising Afghanistan, and extensive field research has made it equally clear that counter-narcotics policies in Afghanistan must reflect this. The problem is that currently, the economic development necessary to end farming communities' reliance on poppy cultivation is precluded by the ongoing insecurity in Afghanistan. The village-based *Poppy for Medicine* project is a counter-narcotics initiative which allows for the circumvention of this catch-22 situation. As outlined in Part A.1, the security measures embedded in the *Poppy for Medicine* project model would allow for the immediate development of the economies of rural Afghan farming communities. The secure development generated by *Poppy for Medicine* projects would in turn have an immediate ink-blot effect on security and development, and in doing so provide a bridge to longer term sustainable security and development.

Part A4

Scientific Pilot Projects

Part A4: Scientific Pilot Projects

Summary

Following the release of this Technical Dossier, the next step is to implement scientific Pilot Projects in different villages in Afghanistan to further test the conditions and specifics of the *Poppy for Medicine* project. The Senlis Council urges the Afghan government and the international community to implement these scientific Pilot Projects at the next planting season, commencing autumn 2007. This would allow for an evaluation period from October to May to investigate, in carefully selected villages, the essential agricultural, pharmaceutical, economic and control elements of a *Poppy for Medicine* project.

1 Control and Legal Framework

1.1 Control Framework

The scientific Pilot Projects would test the comprehensive *Integrated Social Control* system described in Part A1. The existing strong social control systems in Afghan villages should be incorporated in the Pilot Project phase to examine the extent to which village-based controls are able to safeguard against diversion of raw materials and other illegal activities surrounding the *Poppy for Medicine* project.

1.2 Legal Framework

Poppy for Medicine projects, and the establishment of scientific Pilot Projects are compatible with the Afghan Constitution, with Afghan domestic law and with the international law related to drug control. The 2005 Afghan Counter Narcotics Law contains extensive provisions for the distribution of licences to poppy farmers and offers a strong basis for scientific Pilot Projects.[54] Under the provisions of the treaties governing the production of medicines from opium, no formal approval is required from the International Narcotics Control Board. In accordance with international law, without requiring any authorisation from or notification to an international body, Afghanistan can immediately start cultivating poppy under a strict licensing system for its own domestic use for the domestic manufacture of morphine.[55] This is the case regardless of whether the morphine is produced for *domestic use* or for *export.*

[54] The Islamic Government of Afghanistan, "Law on the classification of drugs and precursors, regulation of licit activities and drug-related offences", December 2005, Article 7.
[55] Brice de Ruyver and Laurens Van Puyenbroeck, 'The United Nations Convention Regime' in The Senlis Council, Feasibility Study on Opium Licensing in Afghanistan for the Production of Morphine and other Essential Medicines (September 2005) [online] Available at: http://www.senliscouncil.net/modules/publications/008_publication

2. Timeline, Planning and Implementation

2.1 Timeline of the Pilot *Poppy for Medicine* project

The total running time of the Pilot Projects would be 8-9 months, or one growing season, from October 2007 until May 2008. The exact running time would depend on the planting and harvest seasons in the different provinces within which the Pilot Projects would be implemented. For example, in Nangarhar province (eastern Afghanistan), the poppy planting season starts in October and last until April, May.

One month before the start of the growing season, the pilot project site should be fully operational and secured by the local community with help from the ANP. This means that the organization of the Pilot Projects should start in August 2007.

Pre-planning	Planning	Implementation	Evaluation
August 2007	September 2007	Oct./Nov. 2007	May/June 2008

2.2 Implementation of the Pilot *Poppy for Medicine* Projects

A Pilot *Poppy for Medicine* Project would comprise a planning phase, five documentation phases and an evaluation phase:

I. Planning phase

Meet the stakeholders and community leaders at the level of the local institutions and discuss the basic outline of the Pilot Project

II. Documentation phase I: Implementation:

Document the proceedings at the informal local decision-making *shura* which is setting up the small Pilot Cooperative. At this stage, the members of the cooperative are selected (farmers), and the sub-contracted land-labourers, local guards, carriers, lab staff and other staff that is needed. The lands are selected and the best arrangements for agricultural inputs (seeds, fertiliser, etc.) are agreed upon; While a preliminary budget and inventory lists should be drawn up before the implementation phase, the initial work of the *shura* and the discussions with the Pilot Cooperative

members would reveal whether these are realistic in terms of costs and necessary inputs;

III. Documentation phase II: Cultivation

Documentation during the growing season: During the months prior to the harvest, the implementation and running phase of the Pilot Project should be documented carefully to allow for a thorough evaluation of the different pilots in different areas;

IV. Documentation phase III: Harvesting

Documentation and external monitoring during the harvest period: This includes monitoring of the harvesting methods and yield per farmer and per Pilot Cooperative and checking the total yield of the Cooperative against the area of poppies originally planted and the quantity of poppies harvested.

V. Documentation phase IV: Medicine production:

Documentation of how the raw poppy materials would be converted in the small laboratories of the Pilot Project sites, and how they would be packaged.

VI. Documentation phase V: Sales and delivery:

Documentation of how the medicines would be transported to Kabul for domestic distribution, and how they would be exported and sold to international markets.

VII. Evaluation phase

Evaluation of the whole Pilot Project, from planning, to the delivery of the medicines.

3 Number and Location of Pilot Projects

3.1 Number of Pilot Projects

For a proper evaluation and comparison of different Pilot Projects, a minimum number of three Pilot Projects is suggested. This would allow for the testing of different climatic and agricultural conditions, and different local decision-making and control processes.

3.2 Location of the Pilot Projects

The location of the scientific Pilot Projects should be carefully selected. If three areas can be selected, these could be located in the northern, eastern and southern part of the country. If more than three Pilot Projects test farms are possible, it might be possible to have a cluster of a number of test farms in each area.

The Pilot Project in the southern part of the country should not be situated in a fighting zone, or anywhere fighting has taken place over the past six months. Instead, the selected location should be an area under the control of local district officials, rather than the Taliban or insurgents.

Other selection criteria are:

1. The villages that are selected should have strong local cohesion;
2. They should be located in the main opium growing areas;
3. They should have at least some experience with cultivating poppy;
4. The Pilot Project village should be close enough to a city to allow regular inspections by national and international supervisors and security forces.

4 Employment

4.1 Number of people involved in the Pilot Project

There would be 5 farms in each Pilot Projects. The area of the Pilot Project would be approximately two hectares. For each farm, the family of the farmer would cultivate the poppies, if necessary assisted by sub-contracted land labourers. To harvest the poppies, a total of six harvesters are needed per farm amounting to a total of 30 for the whole Pilot Projects. During harvesting and processing, there would be twelve security guards for the laboratory and 10 security guards for the whole Project (two per farm). In the laboratory, an estimated number of ten laboratory staff would be working. Two drivers are assigned to transport the opium from the fields to the lab on a daily basis during harvest times. Four guards from the lab would accompany them. For final transportation to Kabul, a selection of guards and drivers already employed by the Pilot Projects would be allocated. **Total employment during cultivation would amount to between 50-60 people. During harvest time, the total employment would increase up to 100-110 people.**

Part B

Afghan-made medicines

to meet the global need for painkillers

Part B1

The global supply, use, and need for essential poppy-based medicines

B1 The global supply, use, and need for essential poppy-based medicines

Summary

Poppy-based medicines such as morphine play a fundamental role in the treatment of pain, and the overall worldwide need for adequate and sustained pain relief is increasing. Research shows that in more than 150 countries, containing about 80% of the world's population, only a tiny minority of the patients in need of morphine treatment actually receives this morphine.[56] Millions of people, particularly cancer and HIV/AIDS sufferers in emerging countries, live and die in unnecessary pain because their needs for essential morphine medicines are not being met.

[56] World Health Organisation, "Briefing Note: Access to Controlled Medications Programme," March 2007, p.1; World Health Organisation, "Access to Controlled Medications Programme: Framework," February 2007, p.6.

1 Demand and supply: the current poppy-based medicines production system

1.1 Principles of the current system

The production, international trade and use of poppy-based medicines such as morphine are strictly controlled under international law through an elaborate system of estimates and statistical returns.

The 1961 Single Convention on Narcotic Drugs governs the annual international trade of opiates raw materials used for scientific and medical purposes. Adherence to the rules and regulations of this Convention is overseen by the International Narcotics Control Board (INCB). National governments must submit to the INCB quarterly and annual statistical reports on the manufacture, use, import and export of poppy-based medicines to ensure that the worldwide supply of these medicines does not greatly exceed demand, nor fall significantly below the prescribed targets. As such, the international supply of raw materials used to make morphine depends almost entirely on the estimated global demand for these raw materials, as measured through the INCB-administered system.

Providing for the strict control of the raw poppy materials used in the production of medicines, this system can be described as an almost perfect closed, planned economy. Importantly, under article 21 of the 1961 Single Convention on Narcotic Drugs, the quantity of essential opium-based medicines manufactured in, or imported into, a country must never exceed the official estimate which that country had submitted to the INCB. These statistical reports constitute a country's official requirements of narcotic drugs for the following year; once validated by the INCB, the estimates become binding for governments. Supply countries[57] are only legally allowed to produce as much as is necessary to meet the total estimated global requirements. Thus the availability of morphine around the world in any one year is in effect dependent on the total use of primary materials from two years previous.

[57] Supply countries are those countries which supply poppy raw materials and/or manufacture poppy-based medicines. The major supply countries are India, Turkey, Australia, France, Spain and the UK.

1.2 Stocks within the system

Although significant stocks of raw poppy materials currently exist in several countries,[58] these stocks do not represent a global over-supply. Stocks appear within the current poppy-based medicine supply system for two main reasons:

1. Because INCB-administered commodities constitute the raw materials for a range of essential medicines, consumer countries often build up strategic reserves to be able to cope with future shortage;
2. Producing countries build stocks to both smooth price trends over time, and to compete effectively with other producing countries.

Typically, stocks of agricultural commodities are at levels sufficient to cover several years of consumption. In comparison, current stocks of raw poppy materials are relatively low.[59] Moreover, because these stocks are created and managed *within* the current supply system, they can not be used to supply needs un-accounted for by the INCB-administered system.

1.3 Current system provides for "market" demand, not actual need

The INCB administered system is designed to identify *market demand* for raw poppy materials and to manage the related supply. The INCB has proven efficient administrating this highly regulated market. It does not, however, state the *actual need* for poppy-based medicines.

In emerging and transitional countries, patients' demands for morphine and other poppy-based medicines are currently significantly underestimated because of a self-perpetuating cycle of medical under-prescription and restrictive regulations which inhibit countries' ability to import morphine. Given that demand is measured - under the current supply system - by actual consumption the previous year, demand from less economically developed nations remains structurally low and systematically

[58] For instance, the United States, France and Japan hold important stocks of raw poppy materials: for opium, the US has stocks of 95 tons, France 11.9 tons and Japan 144 tons. India keeps the largest stocks with 1632 tons. See: International Narcotics Control Board, "Estimated World Requirements for 2007", Statistics for 2005, Part 4: Statistical Information on Narcotic Drugs, Table XII, p. 79 [online]. Available at: http://www.incb.org/pdf/e/tr/nar/2006/Narcotics_publication_2006_part4_en.pdf

[59] See: International Narcotics Control Board, "Estimated World Requirements for 2007", Statistics for 2005, Part 4: Statistical Information on Narcotic Drugs, Table XII, p. 73-81 [online]. Available at: http://www.incb.org/pdf/e/tr/nar/2006/Narcotics_publication_2006_part4_en.pdf

understates the actual need. As such, many countries, most of the less economically developed and emerging countries, but also even highly industrialised countries, are caught in a cycle that deprives patients of the essential medicines necessary to ease the global pain crisis. Furthermore, in a number of countries the system to assess and submit estimates to INCB does not function well

Un-met need for painkillers in Latin America

The consumption of poppy-based medicines in Latin America is extremely low, despite its large population and increasing cancer and HIV/AIDS burdens. Latin America consumes less than 1% of the global consumption of morphine, due to under-prescription by medical staff untrained in poppy-based medicines, overly restricted laws and the high cost. Most countries are below the global mean of 6.2 mg of poppy-based medicines per capita, although some countries have increased. In 2005 the entire population of Argentina (39.9 million) used just 96 kg of morphine, what represent 2.4 mg per capita. This only represents one tenth of the morphine consumption per capita rate in Germany, which in 2005 was 24.5 mg.

Only 5–10% of patients in Latin America in need of palliative care receive it, and 97% of palliative care provision is available in large cities. In 2005, to meet the pain needs of the end-stage HIV/AIDS and cancer patients in Latin America, 7.1 metric tons of morphine would have been needed, but just 600 kg of morphine was actually used, leaving 91% of these patients' pain needs un-met.

Low estimates of a country's demand for morphine are a result of a number of factors, including doctors' reluctance to prescribe medicines their patients will not be able to actually purchase; the relatively high cost of these medicines; dysfunctional bureaucracies that impose overly restrictive regulations which limit the number of pharmacies that stock the medicines, thereby further limiting patients' access to these medicines and constraining doctors' prescribing practices; and cultural misunderstandings related to the effects of poppy-based medicines.[60] This in turn

[60] International Narcotics Control Board Report 2000, "Over-consumption of Internationally Controlled Drugs" p.2-3, [online] Available at: http://www.incb.org/pdf/e/ar/2000/incb_report_2000_1.pdf.

results in an inadequate supply of poppy-based medications, leaving countries such as those in Latin America with a great disparity between need and supply (see box).[61]

For those countries whose bureaucracies and health system are able to identify and supply a demand corresponding to the essential need of their population, the current international system of supply functions adequately. Nevertheless, the INCB has admitted that "Most developing countries lack the resources and expertise required for determining medical needs and adjusting drug supply to meet those needs."[62] The existence and perpetuation of an un-met need outside the market demand is an alarming fact that calls for watchful analysis and swift action.

For further discussion of these factors, see Logie, D. E., and R. Harding, "An evaluation of a morphine public health programme for cancer and AIDS pain relief in Sub-Saharan Africa", BMC Public Health, 2005; 5: 82, [online] Available at: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1232854

[61] International Narcotics Control Board, "Estimated World Requirements for 2007: Statistics for 2005, Part 4: Statistical Information on Narcotic Drugs", [online]. Available at: http://www.incb.org/pdf/e/tr/nar/2006/Narcotics_2006_ebook.pdf
See also: Wenk and Bertolino, "Palliative Care Development in South America: a focus on Argentina", Journal of Pain and Symptom Management, Vol. 33, No. 5, May 2007, p. 646-647

[62] International Narcotics Control Board Report 2000, "Over-consumption of Internationally Controlled Drugs" p.2-3, [online]. Available at: http://www.incb.org/pdf/e/ar/2000/incb_report_2000_1.pdf.
For further discussion of these factors, see Logie, D. E., and R. Harding, "An evaluation of a morphine public health programme for cancer and AIDS pain relief in Sub-Saharan Africa", BMC Public Health, 2005; 5: 82, [online] Available at: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1232854

2 The global un-met need for morphine

2.1 Official measurements of "demand" do not reflect actual morphine needs

The actual need for painkilling medicines worldwide is not fully matched by figures measuring market demand. In particular, as most of the world's population still has little access to painkilling medicines, the actual need for morphine remains largely un-met.

Official figures from the INCB show that just a handful of wealthy countries consume the significant majority of the global supply of poppy-based medicines. For instance, the United States, Canada, Europe, Japan, Australia and New Zealand, together representing less than 20% of the world's population, accounted for more than 95% of the total morphine consumption in 2005.[63] This indicates a significant under-consumption of morphine affecting the remaining 80% of the world's population, whose combined morphine consumption represented less than 5% of the global total.

WHO efforts to increase prescription of poppy-based medicines

Stressing the need for a *balance* between the obligations posed by UN conventions for fighting against the illegal narcotics, and the need to ensure and, in most cases, increase the availability of poppy-based medicines,[64] the World Health Organisation (WHO) heavily promotes the prescription of poppy-based medicines for the treatment of pain, and includes morphine is on its list of essential medicines.[65] Based on the known effectiveness of morphine and codeine, the WHO has created a three step pain ladder known as the WHO Analgesic Method for Cancer Pain Relief, designed to provide a scientific basis to encourage health professionals worldwide to use poppy-

[63] International Narcotics Control Board, "Estimated World Requirements for 2007, Statistics for 2005, Part 4: Statistical Information on Narcotic Drugs," Figure 13, p. 79 [online]. Available at: http://www.incb.org/pdf/e/tr/nar/2006/Narcotics_2006_ebook.pdf

[64] World Health Organisation, Achieving Balance in National Opioids Control Policy, 2000, [online]. Available at: http://whqlibdoc.who.int/hq/2000/who_edm_qsm_2000.4.pdf Ibid. Guideline number 12 of the report states that "governments should permit and encourage the distribution and availability of opioid medications throughout the country, in order to maximize physical access of patients to pain relief medications while maintaining adequate controls to prevent diversion and abuse."

[65] Essential medicines, as defined by the World Health Organisation are "those drugs that satisfy the health care needs of the majority of the population; they should therefore be available at all times in adequate amounts and in appropriate dosage forms, at a price the community can afford." See: World Health Organisation, s WHO Model List of Essential Medicines, 15th edition, March 2007, p.2 [online]. Available at: http://www.who.int/medicines/publications/EML15.pdf

based medicines to treat pain.[66] To help address the impediments that hamper the availability and use of poppy-based medicines particularly in less economically developed and emerging countries, at the request of the United Nations' Economic and Social Council COSOC and the World Health Assembly,[67] the WHO developed the Framework to the Access to Controlled Medications Programme in consultation with the INCB.

Despite the World Health Organisation's limited success in promoting poppy-based medicines for palliative care for cancer and HIV/AIDS in emerging countries, the sheer enormity of the global pain crisis demands ongoing sustained action by the WHO, governments and international regulatory boards. Moreover, given the increasing need for cancer and HIV/AIDS related palliative care, demand for poppy-based medicines is set to rise dramatically in the next few years.[68]

2.2 Current per capita use of and global need for poppy-based medicines

Although the World Health Organisation has long acknowledged the existence of such an extensive un-met need, measuring the size of the un-met need for morphine is difficult. However, some measurements are available. A comparison of national per capita uses of morphine reveals glaring discrepancies in the use of morphine within individual countries, a reliable lower bound estimate of the amount needed can be obtained by calculating the morphine need for HIV and cancer treatment.

International comparisons of per capita consumption levels allow a quick assessment of the relative size of the global morphine shortage. An estimate of the global un-met

[66] WHO has developed a three-step "ladder" for cancer pain relief: "If pain occurs, there should be prompt oral administration of drugs in the following order: non-opioids (aspirin and paracetamol); then, as necessary, mild opioids (codeine); then strong opioids such as morphine, until the patient is free of pain. To calm fears and anxiety, additional drugs – "adjuvants" – should be used. To maintain freedom from pain, drugs should be given "by the clock", that is every 3-6 hours, rather than "on demand" This three-step approach of administering the right drug in the right dose at the right time is inexpensive and 80-90% effective. Surgical intervention on appropriate nerves may provide further pain relief if drugs are not wholly effective." World Health Organisation Pain Ladder, [online]. Available at: http://www.who.int/cancer/palliative/painladder/en/

[67] Resolutions ECOSOC 2005/25 and WHA58.22, 2005.

[68] According to the WHO, the incident rates for cancer are expected to increase by 20% within the next two decades.

pain needs in a number of global regions can be calculated under any given hypothesis on the required or attainable level of consumption.

This is done by calculating the quantities of morphine actually consumed per capita in various global regions (see Table 2), and then calculating the quantities of morphine needed to raise the per capita consumption rate of under-consuming regions to a given higher proportion of the average rate of those regions in which patients' pain needs are largely being met (see Table 3).

Morphine "consumption" rate in most global regions does not reflect actual <u>needs</u>

In 2005, the average consumption of morphine was just 4.9 mg per person globally. However, this global rate clearly does not reflect uniform actual consumption of morphine around the world.

Table 2: Regional per capita use of morphine in 2005

Region	Population (million)[69]	Total morphine use (kg)[70]	Consumption per capita (mg) [71]
North America	331	18,402	55.50
Latin America	549	573	1.04
Western Europe	387	9,296	24.02
Eastern Europe & Central Asia	495	681	1.37
Asia & Pacific	3,620	2,431	0.67
Northern Africa & Middle East	350	103	0.29
Sub-Saharan Africa	741	228	0.30
Global	**6,473**	**31,700**	**4.90**

Rather, the majority of the global morphine supply was consumed in North America and in Western European countries, despite those regions accounting for just 17.2% of the world population.[72] The per capita consumption rates of these regions (55.5 mg for North America and 24 mg for Western Europe) were significantly higher than the

[69] All figures taken from United Nations "2005 Demographic Yearbook" [online], Available at: http://unstats.un.org/unsd/demographic/products/dyb/dyb2.htm

[70] International Narcotics Control Board, "Estimated World Requirements for 2007, Statistics for 2005, Part 4: Statistical Information on Narcotic Drugs", [online] Available at: http://www.incb.org/pdf/e/tr/nar/2006/Narcotics_2006_ebook.pdf

[71] The per capita rate is calculated by dividing the total global morphine use by the total population.

[72] International Narcotics Control Board, "Estimated World Requirements for 2007, Statistics for 2005, Part 4: Statistical Information on Narcotic Drugs," Figure 13 p.79 [online] Available at: http://www.incb.org/pdf/e/tr/nar/2006/Narcotics_2006_ebook.pdf

regional averages of Eastern Europe and Central Asia (1.4 mg), Latin America (1 mg), or Sub-Saharan Africa (0.3 mg).

2.3 Estimates of un-met morphine need through extrapolation of consumption needs

That the majority of the global populations' morphine consumption rates are significantly lower than that of Western Europe indicates an extensive gap between the supplies of, and actual need for, essential poppy-based medicines. If patients suffering from pain in other global regions[73] were to have used as much morphine per capita in 2005 as patients in Western Europe (24 mg), an extra 134 metric tons of morphine, (representing 1341 metric tons of opium) would have been needed (see figure 3 below).

Table 3: Increasing regional morphine consumption to Western Europe rates

Region	Current annual consumption per capita (mg)	Quantity of morphine needed to increase annual consumption to 12mg per capita (mt)	Quantity of opium needed to make this morphine (mt)	Quantity of morphine needed to increase annual consumption to 24mg per capita (mt)	Quantity of opium needed to make this morphine (mt)
North America	55.50	-	-	-	-
Latin America	1.04	6.0	60.1	12.6	126.0
Western Europe	**24.02**	-	-	-	-
Eastern Europe & Central Asia	1.37	5.3	52.6	11.2	112.0
Asia &Pacific	0.67	41.0	410.1	84.4	844.5
Northern Africa & Middle East	0.29	4.1	41.0	8.3	83.0
Sub-Saharan Africa	0.30	8.7	86.6	17.6	175.6
World	**4.90**	**65.0**	**650.4**	**134.1**	**1341.0**

For sub-Saharan Africa alone, 17.6 metric tons of morphine would be needed if patients there were to consume morphine at the same rate as patients in Western Europe.[74] Moreover, because Sub-Saharan Africa bears the world's largest HIV/AIDS burden, the region's need for pain-medicines is likely to be significantly higher than that in Western Europe.

[73] The global regions referred to here are Latin America, Eastern Europe and Central Asia, Asia and Pacific, North Africa and Middle East, and sub-Saharan Africa.

[74] According to the WHO, the mortality rates for cancer in Africa are significantly higher than the mortality rates in Europe, due to later detection times for incidences of cancer in African countries. Due to the later detection of cancer in African countries, often the only form of treatment cancer patients receive is palliative care. As such, the need for poppy-based painkillers is much higher in Africa than in Europe.

A further 84 metric tons of morphine, representing the equivalent of 844 metric tons of opium, would have been needed, for all patients in Asia and Pacific to be able to consume morphine at the same rate as patients in Western Europe in 2005. Even if patients in Latin America, Eastern Europe and Central Asia, Asia and Pacific, North Africa and Middle East, and sub-Saharan Africa had used just half as much morphine as patients in Western Europe did in 2005, an extra 65 metric tons of morphine, (representing 650 metric tons of opium) would have been needed.

2.4 Extensive morphine shortage for pain associated with cancer and HIV/AIDS

A reliable estimate of a significant part of the global morphine shortage can be calculated using measurements of the pain needs of end-stage cancer and HIV/AIDS patients in the world. The un-met pain needs of specific sets of patients in a given country can be reliably assessed through a method based on the use of morphine for the treatment of pain. A disease-specific need for morphine can be calculated using the prevalence or mortality rate linked to that disease and the corresponding treatment average requirements.

The extent of the 2005 global shortage of pain-medicines for end-stage cancer and HIV/AIDS can be measured using the calculations employed by researchers from the University of Toronto.[75] Estimates for various global regions and for the world are

[75] See Figure 1 and Fischer, B J. Rehm, and T Culbert, "Opium based medicines: a mapping of global supply, demand and needs" in Spivack D. (ed.) Feasibility Study on Opium Licensing in Afghanistan, Kabul, 2005, p.66, [online]. Available at:
http://www.senliscouncil.net/modules/publications/008_publication
These patients' pain needs are calculated from the number of cancer and HIV/AIDS deaths in 2005, multiplied by the average length of treatment (180 days) at the average dosage level (120 mg per day). According to medical literature the average length of time per patient spent in end-stage cancer is approximately 6 months, or 180 days, and the average maintenance level of morphine given to patients for cancer pain is 30 mg every 3 to 4 hours, or approximately 120 mg per day. Around 70% of end stage cancer patients and 50% of end-stage HIV/AIDS patients endure moderate to severe pain. Given that not all end-stage HIV/AIDS and cancer patients experience moderate to severe pain, or receive treatment for their pain, this calculation is bound by the conservative assumption that at least half of the total number of patients who died from HIV/AIDS in 2005, and 45% of those that died from cancer that year received morphine treatment for their moderate to severe pain.
See den Daas, N. 1995, "Estimating Length of Survival in End-Stage Cancer: A Review of the Literature", Journal of Pain and Symptom Management, vol. 10, no. 7, pp. 548-555; Hough, S. W. & Portenoy, R. K. 2004, "Medical Management of Cancer Pain," in Principles and Practice of Pain Medicine, 2 ed, C. A. Warfield & Z. H. Bajwa, eds., McGraw-Hill, pp. 465-476. The numbers of deaths in 2005 from HIV/AIDS are taken from the 2006 UNAIDS Epidemic Update Report, December 2006, [online] Available at: http://data.unaids.org/pub/EpiReport/2006/2006_EpiUpdate_en.pdf; The

shown in a table (Table 4). These results provide consistent lower bound approximations of the overall need for poppy-based medicines.

> ***Palliative care needs to increase in the future:***
> Pain relief experts predict the global need for pain medication will increase. By 2020, there will be a significant ageing population in Europe, North America, East Asia and Latin America. HIV/ AIDS projections in 53 African countries suggest that mortality due to HIV will increase by a factor of five, while global cancer rates will increase by 50% from 10 million in 2002 to 15 million in 2010. Furthermore, 50% of new cancer cases are now occurring in developing countries.

In 2005 end-stage cancer and HIV/AIDS patients in Eastern Europe and Central Asia needed a total of 9.5 metric tons of morphine; yet according to the INCB, the total quantity of morphine consumed in this region that year amounted to less than 600 kg.[76] Thus, a further 8.9 metric tons of morphine, equivalent to 89 metric tons of opium, would have been needed. In other global regions, the gap between the actual need and annual use is even wider. In Africa in particular, the need for essential poppy-based pain medicines remains mostly un-met. The 2 million people who died of HIV/AIDS and cancer in sub-Saharan Africa in 2005 consumed less than 1% of the quantity of morphine that was required (76.5 metric tons). Likewise, Asia's need for poppy-based pain-killing medicines is far from being met. In 2005, 98% of the pain needs of dying HIV/AIDS and cancer patients in Asia were not met.

These figures show that significant levels of pain medicine needs are going un-met around the world. Furthermore, it should be noted that the above figures only represent the un-met needs of HIV/AIDS and cancer patients for morphine, while other patients suffering from post-operative and chronic pain are not taken into account. Thus it is likely that the pain-medicine deficits in these regions would be even more alarming once all the poppy-based medicines needs of patients are factored in. Equally, pain medicine needs are set to rise in the future, as palliative care becomes more necessary.[77]

numbers of deaths from cancer are taken from the World Health Organisation's online assessment tool "The Impact of Cancer by Country", [online] Available at: http://www.who.int/ncd_surveillance/infobase/web/InfoBasePolicyMaker/reports/ReporterFullView.aspx?id=5

[76] International Narcotics Control Board, Estimated World Requirements for 2007, "Statistics for 2005, Part 4: Statistical Information on Narcotic Drugs," Table XII, pp.204-229 [online]. Available at: http://www.incb.org/pdf/e/tr/nar/2006/Narcotics_2006_ebook.pdf

[77] Callaway, M. and Ferris, F., "Foreword; Special Issue Advancing Palliative Care: the Public Health Perspective", Journal of Pain and Symptom Management, Vol. 33, No. 5 May 2007, p. 484

Table 4: Cancer and HIV/AIDS morphine needs in global regions in 2005									
Region	**Disease**	**No. of deaths in 2005[78]**	**Estimated no. of patients in moderate to severe pain[79]**	**Morphine treatment period[80] (days)**	**Daily[81] dosage (mg)**	**Estimated need[82] (mt)**	**Actual use[83] (mt)**	**Un-met need[84] (mt)**	**Opium need[85] (mt)**
Eastern Europe & Central Asia	HIV/AIDS	53,000	26,500	600	120	1.9	0.598	8.9	89
	Cancer	780,000	351,000	180	120	7.6			
Asia	HIV/AIDS	633,000	317,000	600	120	22.8	0.637	57.0	570
	Cancer	3,580,000	1,610,000	180	120	34.8			
Sub-Saharan Africa	HIV/AIDS	2,000,000	1,000,000	600	120	72.0	0.228	76.5	765
	Cancer	460,000	207,000	180	120	4.5			
Latin America	HIV/AIDS	59,000	29,500	600	120	2.1	0.577	6.6	66
	Cancer	519,000	234,000	180	120	5.0			
Global	HIV/AIDS	2,800,000	1,400,000	600	120	100.8	**31.8**	**142.9**	**1429**
	Cancer	7,600,000	3,420,000	180	120	73.9			

[78] The numbers of deaths due to AIDS in 2005 are taken from the 2006 UNAIDS Epidemic Update Report, December 2006, [online]. Available at: http://data.unaids.org/pub/EpiReport/2006/2006_EpiUpdate_en.pdf;
The numbers of deaths from cancer are taken from the World Health Organisation's online assessment tool 'The Impact of Cancer by Country', [online]. Available at: http://www.who.int/ncd_surveillance/infobase/web/InfoBasePolicyMaker/reports/ReporterFullView.aspx?id=5

[79] Given that not all end-stage HIV/AIDS and cancer patients experience moderate to severe pain, or receive treatment for their pain, this calculation is bound by the conservative assumption that only half of the total number of patients who died from HIV/AIDS in 2005, and 45% of those that died from cancer that year would have received morphine treatment for moderate to severe pain.
See: Lefkowitz, M. & Breitbart, W. 1998, "Chronic Pain Associated with Aids", Pain Management: A Practical Guide for Clinicians, 5 ed, vol.2 R.S. Weiner, ed., St. Lucie Press, pp.541-614.

80 The average length of time per patient spent in end-stage cancer is approximately 6 months, or 180 days, while the average length of AIDS end-stage survival is 20 months, or approximately 600 days. See: den Daas, N. 1995, "Estimating Length of Survival in End-Stage Cancer: A Review of the Literature", Journal of Pain and Symptom Management, vol. 10, no. 7, pp. 548-555; Hough, S. W. & Portenoy, R. K. 2004, "Medical Management of Cancer Pain," Principles and Practice of Pain Medicine, 2 ed, C. A. Warfield & Z. H. Bajwa, eds., McGraw-Hill, pp. 465-476; Lefkowitz, M. & Breitbart, W. 1998, "Chronic Pain Associated with Aids", Pain Management: A Practical Guide for Clinicians, 5 ed, vol.2 R.S. Weiner, ed., St. Lucie Press, pp.541-614.

[81] According to medical literature (see above), the average maintenance level of morphine given to patients for cancer and HIV/AIDS pain is 30 mg every 3 to 4 hours, or approximately 120 mg per day.

[82] Disease-specific needs for morphine are calculated from the estimated number of cancer or HIV/AIDS of patients in moderate to severe pain in 2005, multiplied by the average length of treatment at the average dosage level.

[83] The regional figures for actual use of morphine for the year 2005 were compiled using INCB data. International Narcotics Control Board, 'Estimated World Requirements for 2007, Statistics for 2005', Table XII, pp. 204-229 [online]. Available at: http://www.incb.org/pdf/e/tr/nar/2006/Narcotics_2006_ebook.pdf

[84] These estimates of the un-met need are obtained by subtracting actual consumption from the combined morphine need for the treatment of HIV/AIDS and cancer.

[85] This figure represents the equivalent in opium of the un-met need for morphine, assuming a morphine to opium ratio of 1/10. Indeed, to produce 1 kg of morphine, around 10 kg of opium are required.

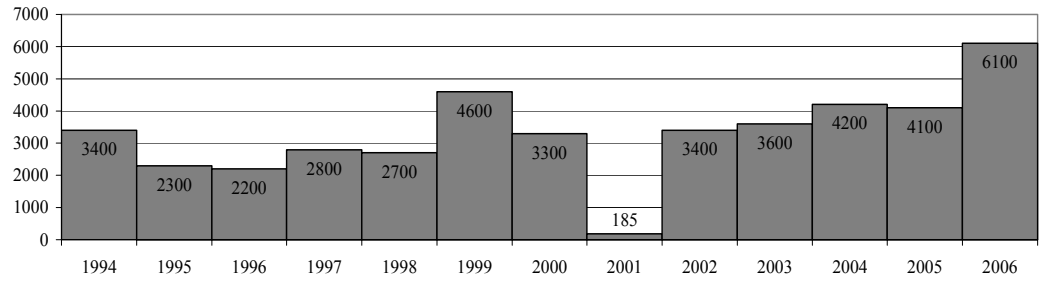
Afghan morphine needed to meet actual global need for painkillers

The global need for poppy-based medicines far outweighs their current availability. Even in the world's six richest countries, which include the United States and the Western Europe, only 24% of patients' pain needs are being met.[86]

In 2006, Afghanistan produced 6,100 metric tons of opium. Yet even this huge quantity would be insufficient to meet the world's current *actual* morphine needs, which in 2005 were estimated to be equal to 6,152 metric tons of opium.[87]

The licensing of Afghan poppy crops would go a long way towards improving the quality of life for those suffering severe pain, especially in transitional and emerging countries where the availability of poppy-based medicines is at its lowest. The potential market for the affordable medical morphine that Afghan *Poppy for Medicine* projects could fill is considerable.

Figure 3: Afghan total opium production, 1994-2006 (metric tonnes)



[86] See Table 4 and B Fischer, J Rehm, and T Culbert, "Opium based medicines: a mapping of global supply, demand and needs" in Spivack D. (ed.) Feasibility Study on Opium Licensing in Afghanistan, Kabul, 2005, p.79, [online]. Available at: http://www.senliscouncil.net/modules/publications/008_publication

[87] It is calculated that to meet 100% of all patients' pain needs around the world in 2005 at the same morphine consumption rate as Western European patients that year, at least 615 metric tons of morphine would have been needed, representing 5,150 metric tons of opium. In 2005, the morphine consumption rate in Western Europe stood at 24.02 mg per capita. According to research, this figure represents just 24% of actual need: if 100% of pain needs in Western Europe were being met, the per capita consumption rate would be nearly 100mg. Using this figure as a baseline, if all patients suffering from pain around the world had had their pain needs at the same rates as Western European patients, 615 metric tons of morphine would have been required.

Increasing global morphine consumption to meet actual global need

Region	Current annual consumption per capita in 2005 (mg)	Total need for morphine-based medicines, assuming a consumption of 100 mg per capita	Quantity of morphine needed to increase annual per capita consumption to 100 mg (mt)	Quantity of opium needed to make this morphine (mt)
North America	55.50	33	15	148
Western Europe	24.02	39	29	294
World	4.90	647	615	6,152

Part B2

Afghan-made medicines to be sold under a second-tier medicine supply system for emerging countries

B2 Afghan-made medicines to be sold under a second-tier medicine supply system for emerging countries

Summary

An analysis of the global un-met need for morphine shows there is a substantial market for Afghan-village made medicines. Research indicates that the current INCB-administered raw poppy materials supply system should be complemented by an additional second-tier system for the supply of finished poppy-based medicines. Leveraging the expertise and resources of farmers in Afghanistan to produce and export Afghan locally-produced morphine, this additional second-tier system, by making available affordable medicines, could help meet the needs of the 80% of the world's population who currently have little or no access to these essential pain-killing medicines.

1 Afghan-made medicines to be sold under a second-tier medicine supply system for emerging countries

1.1 The need for a second tier of medicines supply to complete current system

As the current system supplies demand levels as reported by the INCB but does not cover the global actual need, there is room for a complementary 'second tier' system of supply that would be based on the production of poppy-based medicines offered at affordable prices. This second tier supply system is needed to help meet the developing world's growing need for inexpensive poppy-based medicines.

While only a limited number of countries are authorised by the INCB to export the raw materials used in the manufacture of poppy-based medicines, any country is allowed to manufacture such medicines, regardless of whether these medicines are for internal use or for export. Thus a second-tier supply system based on the export of finished poppy-based medicines rather than the export of raw poppy materials could easily be established. So as to not disrupt the current global supply system or attempt to replace current suppliers of raw poppy materials, a second-tier system would only supply finished poppy-based medicines to less economically developed countries lacking access to these essential medicines.

Two-tier systems are currently in place around the world for commodities as diverse as generic HIV/AIDS medicines and bananas. Multi-level systems of product supply are used to channel like products to distinct markets. A second tier system of product supply is most useful where a significant sector of consumers are disconnected from the overall market for that product, having been either priced out, or ignored altogether. Two-tier product supply structures are particularly useful for making essential medicines more widely available.

In particular, supplies of HIV/AIDS and malaria medicines are sold through two different systems of supply: brand-name, higher cost drugs are made available to wealthier markets; cheaper, generic medicines are supplied to less well-developed

economies. For example, in Sub-Saharan Africa, the bulk of the medicines[88] consumed by HIV/AIDS patients are generic medicines, sold at prices much lower than those charged for branded drugs, which are generally only used if generic 'first line' medicines fail.[89]

Likewise, two-tier supply systems are used to enhance the availability of medicines used in the treatment of those so-called 'neglected diseases' most prevalent in emerging or transitional economies, such as malaria. Because the supply of potent malaria-treatment drugs was not reaching many patients who most needed them, a new system of supply was developed to meet these un-met needs.[90]

The implementation of Afghan village-based *Poppy for Medicine* projects would effectively facilitate the development of a second market for fair trade village-based *Poppy for Medicine*s market supplied by Afghanistan, outside the current INCB administered market. Farmers in the current supply countries who cater to the current market would in no way be affected by the production of village-based *Poppy for Medicine*s. Afghan locally-produced morphine supplies would not compete with existing suppliers, because it would be geared for those countries who do not actually take part in this existing market. Morphine produced under an Afghan village-based *Poppy for Medicine* project would provide these countries that currently have little or no access to these essential medicines with an affordable, high-quality supply of effective painkillers for their AIDS and cancer patients.

[88] Such as Anti-Retro Viral therapies (ARVs).

[89] According to numbers reported to the Global Price Reporting Mechanism at the World Health Organisation, generic companies supplied 63% of the HIV/AIDS drugs to Sub Saharan; these generic drugs commanded, on average about one third of the price that brand companies charged. See Colleen V. Chien, 'HIV/AIDS Drugs for Sub-Saharan Africa: How Do Brand and Generic Supply Compare?' Fenwick & West LLP, US, pp. 2-3, [online] Available at: http://www.plosone.org/article/fetchArticle.action;jsessionid=4119F88A206260D0EBC977352635DFE4?articleURI=info%3Adoi%2F10.1371%2Fjournal.pone.0000278

[90] This system is based on the manufacture and supply of malaria treatment medicines, specially adapted for use in developing countries. Coordinated by the non-profit Drugs for Neglected Diseases Initiative and French pharmaceutical company Sanofi Aventis, this second-tier supply system channels essential medicines to a previously neglected market. Médecins Sans Frontières "MSF welcomes news of new combination drug to treat malaria", 8 April 2005, [online] Available at: http://www.msf.org/msfinternational/invoke.cfm?component=pressrelease&objectid=4783B5C6-E018-0C72-0996723C59E71DDE&method=full_html

1.2 Channelling Afghan-made medicines to the international market through special trade agreements

Under the 1961 Single Convention on Narcotics Drugs, where a country cultivates poppy for its own domestic use in poppy-based medicines, it is not necessary to obtain any formal approval from any United Nations agency or from the International Narcotics Control Board. The only requirement is the establishment of a national agency to oversee the production of the *Poppy for Medicine* process.[91] This holds true even where the morphine that is produced is subsequently exported. There are no legal obstacles stemming from the 1961 Convention, the World Trade Organisation (WTO) or European Union regulations or domestic state laws to the trade of finished poppy-based medicines through special trade agreements.[92] Thus, special trade agreements would enable the sale of Afghan morphine within the frame of current regulatory constraints.

Special trade agreements for Afghan-made medicines

Sales contracts between States: A commercial contract between Afghanistan and another State for an agreed upon quantity of poppy based medicine is a viable option. These contracts are rare today due to the fact the states tend to shy away from direct participation in the market because it raises questions concerning immunity and sovereignty.[93]

Sales contracts between State Enterprises: A perhaps more palatable option is a contract between State owned enterprises. The enterprises are controlled by the state, but are separate entities which acquire rights and obligations in their own name. The 1961 Convention specifically provides for the international trade of narcotic drugs through State enterprises.[94] In order to be compatible with WTO regulations these

[91] While the state should inform the INCB of the establishment of any such agency, the state does not need INCB approval to do so.
[92] Roadmap: International Trade Law Aspects of Exporting Morphine and Codeine from Afghanistan. British Institute of International and Comparative Law, 9-11-07, pp.37-40, [online] available at: http://www.biicl.org/morphine/
[93] Ibid. p 37.
[94] Ibid. p 41.

enterprises must demonstrate that import/export of poppy based medicine follows commercial considerations.[95]

Revenue Sharing Agreement (RSA): A third option would be to set up a commercial contract between Afghanistan or its State enterprise and the company of a third State, that would provide how the revenue generated by the company through the export of Afghan produced medicine would be shared with the Afghan producers. This may be done through a joint venture enterprise, or through an Afghan subsidiary owned entirely by a foreign investor. Because an RSA is a commercial contract, this option does not raise any legal issues pertaining to the regulations or the regulatory bodies discussed above. Furthermore, the flexibility of an RSA would allow contracts to be tailored to economic, social and development needs. It would also provide for the free transfer of technology and expertise for the production and export of Afghan produced poppy based medicine.[96]

[95] General Agreement on Trade and Tariffs, Article XVII: 1(b). See: Roadmap: International Trade Law Aspects of Exporting Morphine and Codeine from Afghanistan. British Institute of International and Comparative Law, 9-11-07, p. 63, [online] available at: http://www.biicl.org/morphine/
[96] Ibid. p 45.

Part B3

Pilot projects to test use of Afghan-made medicines

B3 Pilot projects needed to test the use of Afghan-made morphine

Afghan *Poppy for Medicine* pilot projects could help meet the need for affordable and reliable pain-relieving medicines in emerging countries. The establishment of a second-tier supply system through special trade agreements would allow medicines to reach patients that would otherwise not have access to morphine.[97] This second-tier supply system however, would also need to be tested at the consumer end. Linked to the Pilot *Poppy for Medicine* projects, Pilot Projects should be implemented in selected locations in emerging countries to ensure that the production of affordable Afghan-made morphine does actually result in increased access to morphine where such access is most needed.

Brazil: a Pilot Project to provide pain relief

Pilot Projects for the use of Afghan-made morphine medicines in Brazilian hospitals could target local populations lacking access to pain-relieving medicines. Finished medicines imported from Afghanistan could be bought by the Brazilian Ministry of Health, who would be able to provide target communities with inexpensive medicines.

Afghan morphine would need to be adequately presented and priced so as to bring about sufficient willingness to use it. Prescription could be fostered by the WHO, while the Brazilian Red Cross could contribute to the appropriate pricing and review the final use of the medicines.

Afghan-made morphine consumer-end Pilot Projects could be integrated with WHO efforts to increase the use of poppy-based medicines in emerging countries. As such they could benefit from the WHO's expertise and usefully contribute to the WHO's stated objectives. Indeed, fair trade Afghan morphine should help address the price issues that limit the prescription and thus use of these essential medicines around the world.

[97] Such a second-tier system to supply morphine medicines to developing countries would complement the existing system which supplies morphine to developed countries.

A Pilot Project would enable an assessment to be made of the extent to which Afghan-made medicines can be made available to populations otherwise lacking appropriate treatment of their pain. A Pilot Project would also examine whether Afghan-made morphine is reliable and affordable enough to respond to some of the currently un-met need for pain-relieving medicines.

Supplying morphine to UN agencies and international NGOs

Whether working with developing countries' national health authorities, or organising the medical response to natural or human disasters in crisis-ridden countries, UN agencies and international NGOs such the International Red Cross play an important role in the procurement of essential drugs such as morphine. International aid agencies and organisations represent a stable potential market for Afghan-made morphine.

The UN Inter-Agency Procurement Service (IAPSO) is the self-funding procurement agent for a range of UN agencies, NGOs and international financial institutions. In 2006, USD 8.5 million of medical supplies were bought through the IAPSO, and in 2005, 43.1% of goods were procured from emerging countries. Equally, tenders for contracts can be made directly to a specific UN agency. The UN Global Marketplace also provides a shortlist of potential suppliers available to UN agencies.

The WHO and the UN are equally involved in the construction of national procurement agencies in less economically developed countries; national governments can either utilise their own procurement agencies or call upon the services of a public or private agency. These agencies purchase the medicines on behalf of the Ministries of Health for their respective countries, who then authorise the import of the drug. Eighty percent of anti–retroviral (ARVs) used by Médecins sans Frontières are purchased in India. These figures are similar to the percentage of ARVs purchased by UNICEF, IDA and the Global Fund.

Affordable Afghan-made morphine, produced through a Pilot *Poppy for Medicine* Project could provide a competitive solution for international aid agencies involved in the procurement of both large and smaller orders of pain relieving drugs.