

MID-TERM EVALUATION OF THE COMMUNITY-BASED AGRICULTURE AND RURAL DEVELOPMENT – EAST PROJECT (CBARD-E)

Mid-Term Evaluation Report



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February 2020

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List of abbreviations and units

Abbreviations have been kept to a minimum and are defined on first use; the following are commonly used in this project:

CBARD structures and organisations

- **CBARD-E:** *Community-Based Agriculture and Rural Development – East* project (the UNDP project being evaluated here)
- **CBARD-W:** *Community-Based Agriculture and Rural Development – West* project (sister UNDP project started the year before CBARD-E began)
- **UNDP:** *United Nations Development Programme* (partner)
- **INL:** *Bureau of International Narcotics and Law Enforcement Affairs* (donor)
- **MAIL:** *Ministry of Agriculture, Irrigation & Livestock* (main implementing partner)
- **CDC:** *Community Development Council* (local elected structures established throughout Afghanistan under the government’s National Solidarity Programme; function as the main partner for local implementation of many CBARD activities)
- **CIG:** *Common Interest Group* (informal structures established by the project in beneficiary communities to bring together farmers producing similar crops, for training, extension and marketing; also used in other projects implemented by MAIL)

Other organisations and projects

- **USAID:** *United States Agency for International Development*
- **FAO:** *United Nations Food and Agriculture Organisation*
 - **FAOSTAT:** international statistical database of food and agriculture maintained by FAO (<http://www.fao.org/faostat/en/#home>)
- **AIM:** *Access to International Markets* project, funded by INL and implemented by Roots of Peace under CBARD
- **CCAP:** UNDP-MAIL *Climate Change Adaptation Project*
- **CDRRP:** UNDP-MAIL *Climate-induced Disaster Risk Reduction Project*
- **CHAMP:** USAID *Commercial Horticulture and Agriculture Marketing Program*, being implemented by Roots of Peace
- **NHLP:** *National Horticulture and Livestock Project*, funded by the World Bank and implemented by MAIL

Measures and currencies

- All measures use the SI (metric) system, other than the local area unit of a “jerib”, equal to 0.2 ha (2,000 m²)
- **\$:** US dollars
- **AFN or Afs:** Afghanis (\$ 1 = 78 Afs in late 2019)

Executive summary

This is a project with problems. Specifically, problems of slow implementation, financial irregularity and widespread under-delivery by suppliers. On the positive side, it has already exceeded its overall target for one important intervention – the area of orchards established – and is now starting to generate data to test the hypothesis that alternative development through high-value crops will reduce opium production.

Proof of concept

The stated purpose of the project is to prove the viability of high-value agricultural-based interventions in improving local economies in Nangarhar as a sustainable alternative to illicit crop cultivation. There is now some limited evidence to suggest that it works:

- Against a background of a country-wide drop in poppy cultivation, driven mainly by the current low price of opium, the latest UNODC survey of Nangarhar province found that the fall in poppy area was significantly greater in treatment communities than in control communities. However, this correlation was observed in only three of the six project districts in Nangarhar, whilst there was no significant difference between treatment and control communities in either Badghis or Farah province under CBARD-West.
- Most respondents in the field survey said that they planned not to grow poppy in future, though this response was as common amongst non-beneficiaries as amongst those who had received high-value crops.

The mechanism through which the project leads to less poppy cultivation are partly social and partly economic:

- The strongest social mechanism is the expectation of future support from the project and a degree of conditionality and coercion: people either believe that they will get support from the project if they stop growing poppies, or they have been told by the community not to grow poppies so that others will get support from the project. This impact is unlikely to endure after the project ends.
- There is also a widespread sense that, after being ignored for the last ten years, the government has now come to the village in the form of the project. If people are genuinely convinced that the government will support them, and if this support goes wider and lasts longer than the current limited project interventions, then it could lead to a long-term and sustainable move out of poppy production.
- The biggest economic factor is that high-value crops help to make households less dependent on the income from poppies. It seems that, other things being equal, most people would prefer not to produce opium, both because of the health risks to them and their families, and because illegal crop production puts them in conflict with the government and in contact with the Taliban. Providing alternative income allows them to exercise their choice not to grow opium.
- The final economic mechanism is that high-value crops use land, labour and capital, and so make these resources less available to grow opium poppies. The field survey suggests that this mechanism plays a relatively minor role, and that it applies to land more than to labour or capital, and to orchards more than to greenhouses.

The nature of the rural economy

The field survey showed clearly that agriculture is not the mainstay of the Nangarhar rural economy. Some 95 % of respondents said that they had mixed income sources and that less than half of their total household income came from agriculture. In fact, it may be misleading to label these people as “farmers”: they are members of rural households that have several different activities and income sources, with agriculture generating some additional income and reduce household expenditure on food.

These other income sources were not specified in the survey but typically include: non-agricultural employment, in both the public and private sectors; non-agricultural businesses, particularly in the service sector; and remittances from family members working in cities and abroad. Rural-urban linkages are usually very important, with some people travelling to work in urban areas and others working in the village but selling their goods and services to urban markets.

This has three important conclusions for the design of future projects:

- 1) We need to know a lot more about the nature of the rural economy and rural-urban linkages so that we correctly understand the people we are trying to help;
- 2) Development projects for rural areas should not confine themselves to just agriculture and food processing, but should look much more widely at the whole range of possible sources of income and employment. A good starting point would be to see where most income and employment currently arise;
- 3) If it is correct that the major long-term driver of a fall in poppy cultivation will be an *increase in the incomes* of households which currently grow poppy, rather than *diverting land* away from poppies, then any action that increases household income should have an impact on opium production, even if the intervention has nothing to do with agriculture.

Building markets

If high-value crops are to take root on a large scale and for the long term, then the inputs of greenhouses, saplings, tools, seeds, fertilisers and pesticides will need to come through sustainable private-sector channels and not short-term projects. The field survey confirmed that these channels already exist, as almost no farmers reported difficulties in finding inputs for their second season, provided they had the money to pay for them.

CBARD and similar projects should encourage the further development of these channels, promoting competition, choice and quality, and ensuring that farmers have good access to technical and market information. Finance remains a serious bottleneck, with almost no finance organisations working in rural areas or showing interest to move into these areas. Whilst this problem persists, projects might support farmers’ access to inputs through voucher schemes that serve to promote rather than bypass commercial input supply. The main risk is that both direct supply and voucher schemes reduce the demand for credit and so may hinder the development of commercial finance. There may not be any immediate solutions, but projects should regard the development of rural financial services as a long-term objective and look for any future opportunities to promote this through their projects.

The role of CDCs

Community Development Councils or CDCs have so far played a major role in project implementation, but the spot-check reports have found, almost without exception, that they

do not have the capacity to procure and implement in line with national or international practice. Widespread illiteracy amongst CDC member is one fundamental problem that will take a lot of time to resolve.

CDCs are essentially representative community organisations that can play a key role in consultation, identifying needs, reaching consensus and bringing the community together for common action. They have a special role to play in designing and overseeing projects for the common good, such as community irrigation schemes, and their involvement with the project and MAIL provides a very visible indication that government is now supporting these villages. However, it is not normal or appropriate for a representative community organisation to be involved in procuring or delivering goods to individual farmers – in a functioning market economy, that is the job of the private sector.

Thus, the solution to the limited capacity of CDCs to procure and implement contracts is not to try to build that capacity, but to strengthen CDCs' ability to carry out their core function of representing the community, and to strengthen input suppliers' capacity to deliver good-quality inputs direct to farmers.

Financial irregularities and poor performance

The project has been plagued by irregularities and breaches of procedure. Within the project structures, irregularities have involved the selection of staff, contractors and beneficiaries, and performance problems have led to long delays and left the whole project without any source of saplings for one critical season. At the level of suppliers there has been widespread under-delivery in terms of quantity, quality and timeliness.

Existing mechanisms for management, monitoring, procurement and financial control have proved ineffective to prevent these problems or to alert senior management rapidly when problems arise. It is therefore time to develop a new approach, which might include:

- 1) removing CDCs from procurement and the implementation of contracts to support individual farmers, and instead:
- 2) signing long-term procurement contracts for key inputs such as greenhouses, with mechanisms which encourage good performance to ensure future orders;
- 3) introducing a voucher system to help beneficiaries purchase readily available items such as fertilisers and seeds, thus removing most of the opportunities for corruption and strengthening the development of these input chains;
- 4) more direct involvement of UNDP in implementation, through whichever mechanism is most appropriate in the specific circumstance of Afghanistan;
- 5) improved monitoring and reporting, so that in future the spot-check reports merely confirm what management already knows, rather than bringing new surprises.

Allocation of project resources

The project should aim to reach a lot more people, in particular to avoid a backlash from disillusioned non-beneficiaries in treatment communities. It should also continue to focus resources on the existing treatment communities or other nearby communities, to build momentum for a large-scale movement out of poppy cultivation and to maintain the goodwill of those who have abstained from opium production in anticipation of future project support.

The two best ways to reach a lot of people are through orchards and irrigation systems. Greenhouses are useful in that they bring quick results, but their high cost means that they

can only reach a limited number of people. There might be some scope to reduce costs, but essentially greenhouse production is a capital-intensive activity.

In order to deliver more orchards and irrigation systems, the project will need to address two key bottlenecks:

- 1) Ensuring an adequate supply of high-quality saplings, by working in coordination with other projects to strengthen and extend the certification scheme, and to introduce long-term planning so that nurseries can prepare in advance for future sapling requirements;
- 2) Speeding up the design and construction of irrigation systems, within the practical constraints of having to implement works after the irrigation season has finished and before heavy rains and snow melt flood the site.

Focus and follow-through

The project should focus on its core interventions of orchards, greenhouses and irrigation systems, and on improving the marketing of orchard and greenhouse produce. It should avoid getting side-tracked into minor interventions such as compost, bee-keeping or cold stores, which are unlikely to have much impact on poppy production. Instead, the project should do everything necessary to make sure the three core interventions are a success.

This will involve understanding beneficiaries and responding to their needs, which currently include more training and support in pest and disease control, in orchard management, intercropping and irrigation, and in greenhouse management, irrigation and fertigation. Marketing remains a key need, and one which the new Output 3 should actively support.

List of recommendations

* denotes strategic recommendations that will need to be addressed more widely by INL, UNDP, UNODC or other organisations.

- Recommendation 1** Finish converting the existing spreadsheet records into a structured relational database, and ensure that future data are properly checked and coded before import. 101
- Recommendation 2** Arrange procedures for regular transfer of relevant data from UNODC databases in Excel or database format*.....101
- Recommendation 3** Extend the “APY” survey to all individual interventions and add sample-based collection of cost data to produce full gross margins for each high-value crop, including orchard inter-crops. 102
- Recommendation 4** Keep records for a representative sample of irrigation project and demonstration activities so that costs and benefits can be calculated.102
- Recommendation 5** Update and extend the analysis of high-value crop margins using data from project monitoring.102
- Recommendation 6** Investigate why project monitoring failed to detect or report some problems, and then take action to avoid recurrence.103
- Recommendation 7** Change the way of working with CDCs to focus on interaction with the community, rather than procurement and contract implementation.104
- Recommendation 8** Implement and support the new management arrangements, with a Deputy Project Manager, heads of units and a Programme Coordinator.....104
- Recommendation 9** Introduce voucher schemes for input supply.105
- Recommendation 10** Work with other projects to help develop the commercial supply of certified saplings, and use a voucher scheme to help beneficiaries buy them.....105
- Recommendation 11** Introduce multi-annual “draw down” contracts for supply of standard items, with incentives for good performance and simple ways to switch supplier in response to poor performance. 106
- Recommendation 12** Review the respective roles of UNDP and MAIL in project implementation and see if there is another workable approach that would give better results. 106
- Recommendation 13** Address the lack of progress in communications and consider alternative approaches if the project team cannot deliver.....106
- Recommendation 14** Focus project resources on the four core interventions of orchards, greenhouses, irrigation systems and marketing. Concentrate on making these interventions a success, and emphasise them in monitoring and reporting.107
- Recommendation 15** Adjust the intervention mechanisms so as to reach as many beneficiaries as possible, aiming for considerably more than the current targets of 389 greenhouses and 910 jeribs of orchard.107
- Recommendation 16** Implement Output 3 with vigour and flexibility.....108
- Recommendation 17** Develop a toolkit of extension materials to increase the effectiveness of front-line extension workers and for direct dissemination to farmers.....108

Recommendation 18 Share experience of demonstration plots and regular interventions as widely as possible, with a strong emphasis on the lessons learned.109

Recommendation 19 Develop an extension strategy to guide the project’s work in this and integrate it more closely with the MAIL extension system.109

Recommendation 20 Continue regular monitoring until at least 2028.109

Recommendation 21 Study the overall rural economy and use the findings to shape the design of future projects for economic development and poppy reduction.109

1 Purpose of the evaluation

The stated objectives of the Mid-term Evaluation are to:

- a) assist the recipient Government, beneficiaries, UNDP and, as appropriate, the concerned partners and stakeholders, to improve the efficiency, effectiveness, relevance, sustainability and impact of the project;
- b) provide feedback to all parties to improve the policy, planning, appraisal and implementation phases; and
- c) ensure accountability for results to the project's financial backers, stakeholders and beneficiaries.

Mid-Term Evaluation within the project cycle

This mid-term evaluation sits between the initial baseline study and needs assessment, and the final evaluation to come at the end of the project. Follow up monitoring may extend beyond the lifetime of the main project, to assess sustainability and track the progress of the orchards as they grow to maturity; the precise approach to follow-up monitoring has not yet been agreed but may result in one or more evaluation reports after the main end-of-project evaluation.

Three key reasons for conducting this mid-term evaluation are to:

1. Identify any serious problems or new opportunities whilst there is still time to address them;
2. Draw early lessons from the project to inform UNDP, INL, MAIL and other organisations who might be running or considering similar initiatives;
3. Follow up the recommendations made in the mid-term evaluation of the CBARD-West project one year earlier, to see if and how they have been implemented.

Building on the mid-term evaluation of CBARD-West

The CBARD-East project started one year later than CBARD-West and follows a very similar structure. This mid-term evaluation also follows a year after that of CBARD-West and was conducted by the same consultant. Many of the issues and conclusions are the same, and in those cases this evaluation simply refers to or quotes relevant sections of the previous evaluation. Text that is substantially the same as the previous report is shown in *grey type*, with any important updates in regular black type; this should allow readers familiar with the project to focus on the new material, whilst still providing a complete and self-standing report.

The most important developments since the previous evaluation are:

1. Allegations of financial irregularity in the CBARD projects first arose around the time of the previous evaluation, when it was still not clear whether there was any truth behind them. Subsequent investigation confirmed some allegations and refuted other. The confirmed problems related particularly to CBARD-East and became a significant factor affecting the project's performance.
2. Results have now become available from the independent third-party field monitoring and spot checks, covering January-September 2019 for both projects and also January-July 2019 for CBARD-East. This has provided an important new source of data that was not available for the previous evaluation.

3. This evaluation included a field survey of 100 respondents in various project villages of Nangarhar province, giving a second important new data source.
4. UNODC has released the results of its mid-term survey of opium cultivation in treatment and control communities of both CBARD projects, providing the first objective means of measuring project impact.

This evaluation report focuses particularly on these four new factors, and also looks at the extent to which the recommendations of the previous mid-term evaluation have been implemented.

2 Evaluation methodology

This mid-term evaluation was conducted from October 2019 to January 2020, including a mission to Kabul and Nangarhar in October-November 2018. The evaluation involved:

- Thorough review of project documentation and relevant background documents, including the UNODC baseline and mid-term monitoring reports (see Annex 8: *References*).
- Updating the detailed description of project interventions to reflect the situation in CBARD-East (see Annex 2: *Description of project interventions*).
- Analysis of the independent monitoring reports (see section 4: *Findings of third-party field monitoring and spot checks*).
- A field trip to Nangarhar province to meet the Director of the Provincial department for Agriculture, Irrigation and Livestock (PAIL), the CBARD Nangarhar project team, and representatives of related projects in the region, and to conduct discussion groups with male and female beneficiaries (see section 5: *Field trip to Nangarhar*).
- A field survey of 100 farmers from six districts of Nangarhar province (see section 6: *Field survey*).
- Structured interviews with staff from UNDP, CBARD and Roots of Peace, plus many detailed discussions and work with CBARD project staff.

3 Background to the country and project

This chapter begins with a brief description of the country context, including some analysis of the markets for both high-value crops and opium. It then examines in some detail the project rationale to see whether it would be possible for the project to achieve all of its goals, even if it were perfectly managed. The final project looks at what the project has done so far, and when; who has benefitted; how much it has cost; and how the project is staffed and managed.

3.1 Country context

Larger than any country in Europe, Afghanistan is highly mountainous, and its 30 million population is distributed across the capital, Kabul, 33 other province centres, 394 district centres and some 45,500 villages¹. The country has experienced almost continuous conflict and violence over the 40 years since the Soviet invasion of 1979, and armed groups are still present in many parts of the country, making it hard for government to exercise effective control or international organisations to operate in these areas.

The combination of geography, insecurity and the state of the roads makes travel slow and risky, and central government remote. Traditional tribal allegiances and community structures play a major role in the rural areas where over 70 % of the population lives. The government's policy, as expressed in the Afghanistan National Peace and Development Framework (ANPDF) and the Citizens' Charter, is to work with this reality and promote Community Development Councils (CDCs) as a key level of government and the one with which citizens most often interact.

However, the challenge of building good governance is a daunting one. Considering a number of global indicators with countries ranked into ten groups from best to worst, Afghanistan currently falls into the ninth group according to the Economist's *Democracy Index*² – which correlates strongly with many indicators of human development – and in the tenth or bottom group for the World Bank's *Ease of Doing Business Index*³ and Transparency International's *Corruption Perceptions Index*⁴. In terms of UNDP human development indicators, the country performs somewhat better than its business and administrative environment would suggest, just slipping into the ninth group for both the *Human Development Index* and the *Inequality-adjusted Human Development Index*⁵. However, in terms of the *Gender Inequality Index*⁶, Afghanistan slips back into the bottom group.

Agriculture plays a major role in rural areas, providing employment to some 53 % of the rural population and generating 18 % of licit GDP, rising to 25 % if the output of opium poppies is included⁷.

¹ As recorded in the UNODC database in 2018.

² <http://www.eiu.com/topic/democracy-index>.

³ <http://www.doingbusiness.org/en/rankings>.

⁴ https://www.transparency.org/news/feature/corruption_perceptions_index_2017.

⁵ <http://hdr.undp.org/en/data>; the Human Development Index was recalculated for Afghanistan in 2019, whilst the latest value for the Inequality-adjusted Human Development Index is from 2015.

⁶ <http://hdr.undp.org/en/data>; 2019.

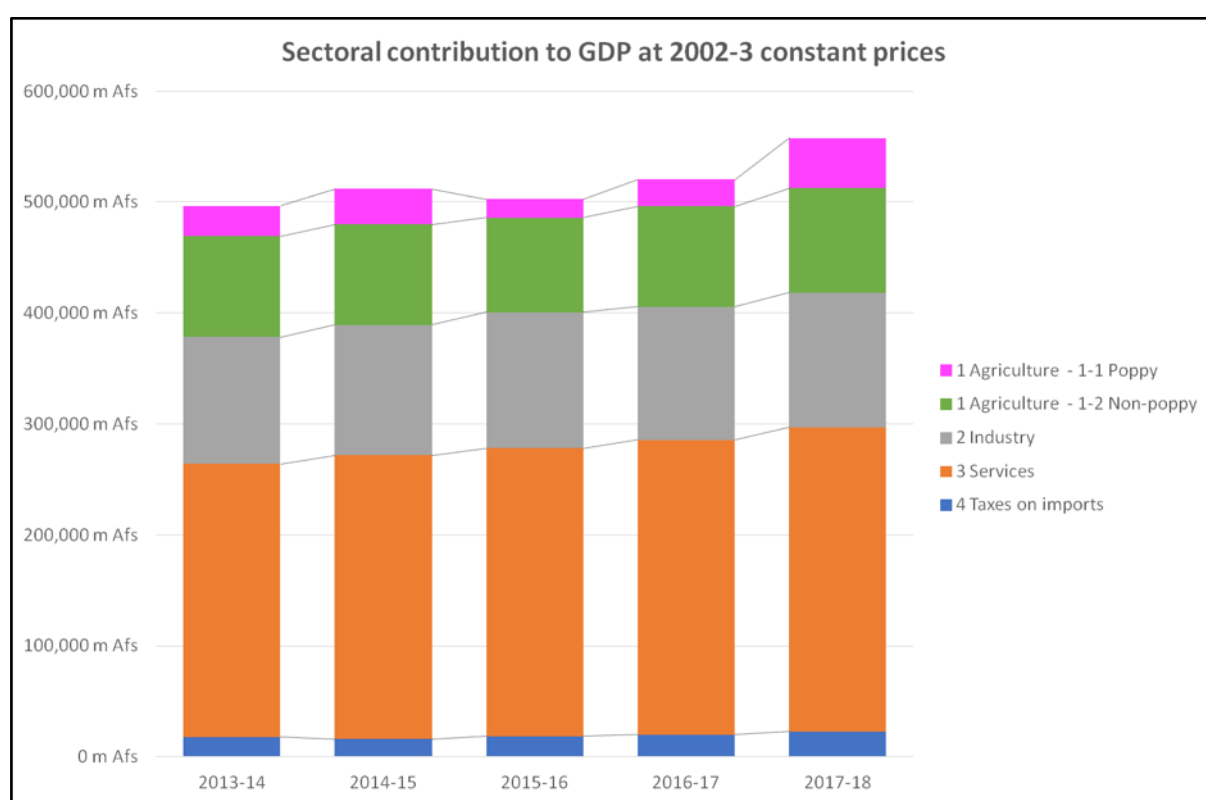
⁷ Population and GDP data from the Afghanistan National Statistics and Information Authority, *Statistical Yearbook 2017-2018* and *Afghanistan Provincial Profile, 2018*.

It is in this climate, and in one of the most inaccessible, impoverished and poppy-dependent provinces, that this project strives to make a difference.

Compared to Badghis and Farah, the security situation in Nangarhar is more difficult, and overall seems to have deteriorated since the previous mission in December 2018. There were some serious security incidents affecting UNDP around the time of the mission, and the national consultant conducting the field survey found that it was not safe to spend long in any one place, since word of his presence quickly got round. It was also even harder to work with women in Nangarhar province, and the idea that a man would interview female beneficiaries had to be abandoned as culturally unacceptable.

Contribution of agriculture and opium poppies to the national economy

The following chart shows the development of Gross Domestic Product (GDP) over the five years to 2018:



Source: Afghanistan National Statistics and Information Authority, Statistical Yearbook 2017-2018

Excluding the illicit poppy sector, services now account for over half of GDP (54 %), with the main segments being transport, storage & communication (27 %), government services (12 %), and wholesale & retail trade (8 %). Industry generates 24 % of total GDP, mostly due to construction (13 %) and manufacturing (10 %). Agriculture comes in third place, with 18 % of licit GDP, but contributes to the income of a large share of the entire population. **In most villages, agriculture will be the one of the main sources of income and employment, but looking at a larger scale to include district and province centres, the service sector is probably more important.**

When opium poppies are included in agriculture the situation changes markedly, with agriculture moving into second place at 25 % of total GDP, of which 8 % comes from poppies and 17 % from other crops and livestock. The contribution of poppies is also quite variable

due to the cyclical nature of the opium market. Non-poppy agricultural output has been reasonably stable and exhibited annual growth of 4 % over this period, but when poppy output is included, agricultural GDP appears more volatile.

3.1.1 Sustainability of high-value crops as an alternative to opium

The viability of high-value crops as a sustainable alternative to poppy cultivation is highly dependent on the market for high-value crops and the market for opium. Two questions are particularly relevant to sustainability:

Q 1. Can markets absorb the extra high-value produce generated by project interventions?

Q 2. Will high-value crops still be competitive if opium prices return to their former high level?

Annex 5, developed for the previous evaluation, examines the two product markets to help answer these questions.

Market for high-value crops

Each of the orchard crops being promoted under the project has a different market situation, as reported by FAOSTAT:

- **Apples:** Afghanistan is a small net exporter of apples. Projected output from both CBARD projects will increase national production by around 7 %. Nationally, this quantity can be absorbed, but it could cause disruption to local markets until traders adjust to the new situation.
- **Citrus:** Almost 95 % of citrus supplies are imported. Projected output from both CBARD projects will represent a very significant 65 % increase in national production but less than 3 % of consumption, so markets should easily absorb this quantity.
- **Grapes:** Grapes account for the large majority of Afghanistan's fruit production by volume, with over 20 % exported as grapes or raisins. Projected output from the CBARD projects will represent an increase in national production of just 0.9 %, which markets will be able to absorb.
- **Pistachios:** FAOSTAT data cover nuts of all kind and show that around 12 % of total production is exported; the majority of this will be pistachios. Projected output from the CBARD projects will represent a 0.5 % increase in total national production, which markets should easily.

In conclusion, the main marketing concern for the project should be to ensure is sold not just at local district markets but also at province centres and to traders who can ship to other parts of the country when the demand is there. If the project interventions were later replicated on a much larger scale, which would be necessary in order to have a significant impact on national opium production, then the market issues would become a lot bigger and require more attention.

Opium production and market

Data collected by UNODC show that the opium poppy sector in Afghanistan behaves like many other agricultural markets⁸: a high opium price induces farmers to use more land for poppies,

⁸ See Annex 5.b.

the resultant increase in opium production then drives down the price, leading farmers to reduce their production two or three years later in a classic commodity cycle. Poppy area and production hit their highest ever level in 2017, leading to a sharp fall in the opium price from around \$ 200/kg to its current level of less than \$ 100.

At this low price, it is not difficult for high-value crops to offer a more profitable alternative to opium poppies, but there is every reason to assume that the opium price will soon return to at least \$ 200/kg and could even reach its former level of \$ 3-400/kg, at which point most high-value crops will seem a lot less attractive. The main conclusion for the project is that it will be important to continue monitoring the impact of the project interventions through at least one full poppy cycle, in order to establish whether high-value crops really offer a *sustainable* alternative to opium production.

3.2 Project rationale

The Project Document states in its Brief Description:

With a stated purpose to prove the viability of high-value agricultural-based interventions in improving local economies in Nangarhar as a sustainable alternative to illicit crop cultivation, CBARD-East aims to reduce opium cultivation and directly benefit an estimated 28,500 households (199,500 beneficiaries).

This sentence is repeated in the Executive Summary of the Inception Report, together with the combined target of 33,240 households (232,680 beneficiaries) for the West & East projects together. In the CBARD-East Performance Monitoring Plan, the figure of 38,500 is used as the target number of households to be reached by the Counter-Narcotics Campaign, not the number to receive orchards, greenhouses or other direct interventions.

In order to fully meet its purpose, the two projects together must achieve three things:

- They must demonstrate that high-value crops are viable in these areas and offer a sustainable alternative to illicit crop production;
- They must reduce opium cultivation;
- They must directly benefit around 33,240 households (232,680 beneficiaries).

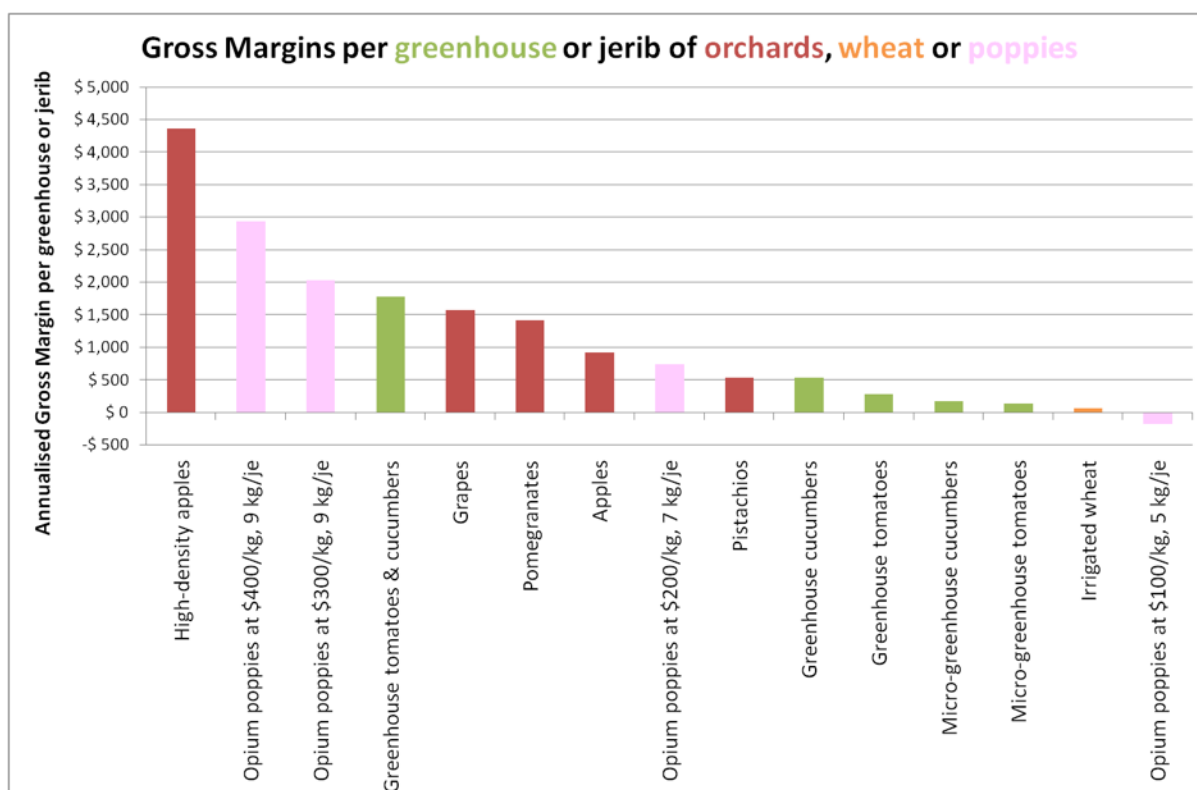
This section examines the underlying rationale and how realistic it is that the project can achieve these three goals.

3.2.1 Viability of high-value crops

In order to test the “viability of high-value agricultural-based interventions in improving local economies in Nangarhar” it is necessary to have some measure of their economic effect. The most appropriate measure is the “Gross Margin”: the income from a crop minus the direct costs of seed, saplings, fertiliser etc. The following analysis was prepared for the previous report, based on *ex ante* models for a range of crops, including those grown in Nangarhar province. The model has not yet been updated with real results from the APY survey, so the values remain unchanged.

At this early stage in the project, none of the new orchards is yet bearing fruit and there are only one or two years of data for the first greenhouses. It is thus too early to measure the viability of the high-value crops, but the project has worked with local experts to produce typical budgets for the lifetime of each investment and thereby to estimate the gross margin that the farmer will receive. These budgets are presented in Annex 6 and summarised here; they consider the full cost of the investment to see how attractive the different crops would be to “replicators” who establish high-value crops with their own money, rather than to beneficiaries who received a grant-in-kind from the project.

The following chart shows the income from one greenhouse or one jerib (one fifth of a hectare) of open-field crops, averaged over 15 years to include both the initial cost of building a greenhouse or planting an orchard, and the revenue when the greenhouse is in function or as the orchard develops to maturity. It covers all the main high-value crops included in the project, plus opium poppies at four different levels of price and yield (see Annex 5.b), together with irrigated wheat as a comparison low-value crop:



Source: Based on Gross Margin budgets prepared by the project in 2018

At the current low opium price of around \$ 100/kg, poppies appear to be loss-making and are out-performed by all other crops, including wheat.

At an opium price of \$ 200/kg, the average for the current decade, all of the orchard crops except pistachios offer a better return than poppies. However, a jerib of poppies still brings a higher return than a greenhouse bought by the farmer; the only exception is where the greenhouse grower can get two crops per year, in which case the return is more than double that of a jerib of poppies.

Once the opium price gets to \$ 300/kg, poppies appear more attractive than all of the high-value crops except for high-density orchards⁹.

This suggests that orchard crops can offer a sustainable alternative to opium poppies, averaged across the years of both high and low opium prices.

However, a significant share of the total cost of opium production is the hired labour needed for harvesting, with most of this money going to landless and migrant workers, one of the most vulnerable groups in rural Afghanistan. If the cost of labour is excluded to reflect the situation when a family uses its own labour, poppies appear more attractive and most orchard crops can equal but not exceed the income from poppies at an opium price of around \$ 200/kg.

The comparison between greenhouses and poppies is more complex because it depends on the size of the greenhouse and the area of poppies: project calculations shows that a 400 m² greenhouse will generate a net income before labour of around \$ 750 from one crop per year (or around \$ 560 for the smaller 300 m² greenhouses now being supplied in Nangarhar), equivalent to that from just over half a jerib of poppies; for a family currently dependent on opium production, that would probably not be sufficient income to let them give up poppies entirely.

Sustainability and scalability

All of the high-value crops appear profitable from the very first year for beneficiaries who are given the greenhouse or saplings and the first year's inputs. However, to be truly sustainable on a large scale, high-value crops must also work when the farmer has to replace the greenhouse without project support, and work for replicators who want to establish orchards or greenhouses using their own funds or borrowed money. The project found that very few farmers have access to affordable credit, so their ability to switch to high-value crops will largely depend on what they can finance from their own resources.

Conventional fruit orchards and vineyards have a relatively low establishment cost and bring a fairly quick income, provided farmers can find a good market for vegetables grown between the young trees, so this system might well be replicated by ordinary farmers; **however, the field survey found that only around half of farmers actually grew intercrops, so for the other half the initial income and overall return on investment will be lower.** Pistachio plantations do not usually include inter-crops and so give no return on investment for several years; it is unlikely that many farmers would invest their own money in this crop, particularly when it grows wild on the hills around the village. Greenhouses and high-density orchards have a

⁹ The survey reported in section 4 included a question about whether farmers would resume poppy cultivation if the price rose to 20,000 Afs/kg (around \$ 260/kg), since this is a price that does occur periodically and offers better returns than most alternative crops.

significant capital cost that few farmers could afford, so it is unlikely that these models will be replicated on a large scale without project support or some kind of credit scheme.

Return on investment

The project has implemented a diverse range of investments, ranging in cost from under \$ 200 for a jerib of pomegranates to over \$ 10,000 for a commercial greenhouse. Which of these offers the best return on limited project funds and which would give the best return on the farmer's own investment? One measure of this is the "Internal Rate of Return" (IRR) – the maximum interest rate that an investor could pay to borrow money and still make a profit.

Considering each type of intervention:

- *Commercial greenhouses producing one crop per year* offer returns of 14-18 %. They would not be worthwhile for a farmer who had to borrow from a micro-finance organisation at 2 % per month (24-27 % per year) but would represent an acceptable return on a loan from an international finance institution such as the World Bank – if such were available.
- *Micro-greenhouses and commercial greenhouses cropping twice per year* offer returns of 35-43 %. In theory these would be worthwhile even at the high interest rates charged by micro-finance organisations, but the profit margin is probably not high enough to justify the substantial risk.
- *High-density apple orchards* offer returns of 63 %; if finance were available, larger farmers might well be interested in borrowing to establish such orchards.
- But by far the best returns come from *conventional orchards*, with returns of up to 350 %. Cash requirements are low and most of the real investment comes from the farmer's own labour. The returns on investment appear so high that both donors and government should prioritise conventional orchards over the other high-value crops so far considered. This conclusion could be applied directly in the next round of project interventions.

Results in practice

All of the data in this section are based on Gross Margin budgets compiled by the Chief Technical Advisor and local experts, rather than on actual results from beneficiary farmers. Over time they should be updated to reflect actual project costs, returns to beneficiaries measured by the APY survey¹⁰, and production costs for which a new survey instrument will be required.

The first year's APY survey data cover results for 138 greenhouses, showing average revenue of \$ 915 for the majority that had produced just one crop and \$ 1,330 for those who harvested a second crop within the period. These values are lower than the projected annual revenue of around \$ 2,400 per greenhouse, but they cover the very first steps of a new venture when farmers must learn a whole range of new technical skills and find the best way to market their crop. Returns will probably rise in future years and can then be used to refine the Gross Margin budgets. A number of respondents in the field survey confirmed that it took them some time to learn how best to grow and market their new high-value crops.

¹⁰ Annual records of Area, Price and Yield from all relevant project beneficiaries.

Effect of wage rates

One of the main effects of economic development is to create employment and raise wage rates. This increases the income of working families, encourages a substitution of capital for labour, and changes the relative profitability of different activities.

Because poppy cultivation is very labour intensive, it becomes considerably less attractive as wage rates rise, and this may well hold the key to a long-term move out of opium production.

What could drive up the price of rural labour? Orchards would not be sufficient, as their annual labour requirement is less than that of opium poppies, but greenhouses can absorb a lot of labour, as can food processing¹¹. In most countries the rise in rural wage rates is driven not by agriculture at all, but by non-farm employment and, most crucially, by commuting or migration to better-paid urban jobs.

Storage and processing

Two interventions being demonstrated by the project are zero-energy cold stores for apples and onions, and raisin houses for drying grapes. Since the previous report, estimates have been made of their economics, showing that four main factors drive the equation: (1) the cost of the structure, which must be kept low for financial feasibility and to allow replication by other farmers; (2) the level of storage losses; (3) the level of usage that the structure gets each year, and (4) the extra price that farmers obtain by storing or processing their product. As with the orchards and greenhouses, these initial models are based on expert estimates, and should be refined over time as solid data are collected from project beneficiaries.

For raisin houses, it is essential to reduce the cost to considerably less than the original CBARD design, which the Roots of Peace project managed to do, and to achieve at least three cycles of grape drying per year, which almost always requires the owner to buy in some grapes before or after his own production is harvested. The economic models for greenhouse production in Nangahar assumed that farmers would grow two crops per year, but the field survey found the average to be just 0.8, so it cannot simply be assumed that all recipients of raisin houses will produce three cycles annually. The project should monitor actual performance and only continue this intervention if it can be sure that most of the selected beneficiaries will actually get multiple cycles. Where this condition can be met, raisin houses can offer good returns.

The economics of cold stores are more marginal and uncertain. Costs must be kept low and the economics would be much improved by using the same store for several crops over the course of the year, but this rarely occurs in practice. Cold stores for apples will not be economic without a major change in design to reduce the cost. They may be more attractive for storing onions, if they are built cheaply and to the right scale for the beneficiary farmers, but onions have not so far been identified as one of the high-value crops to support under this project.

¹¹ The survey found that beneficiaries relied entirely on family labour, so it would be hard to measure the wage rate. However, just over half of orchard beneficiaries and just under half of greenhouse beneficiaries agreed that the labour requirements of their new high-value crop affected their ability to grow other crops, without specifically mentioning poppies.

Irrigation

A significant share of the project's resources is allocated to irrigation projects, such as building new diversion structures to increase the supply of water, and constructing protection walls and syphons to ensure that more of the diverted water reaches the fields, more reliably. Discussion with beneficiaries and other projects in Nangarhar province indicates that irrigation plays an important role and may be a pre-requisite for farmers to switch from relatively drought-tolerant poppy to more water-sensitive high-value crops. Irrigation projects can also bring benefits to many people in the community and hence encourage or support a general movement out of poppy.

However, irrigation projects are expensive and each one is different. The project has not yet prepared an economic analysis for any of its irrigation investments, and hence it is currently not known whether they are cost effective.

Compost units

The project has constructed a number of demonstration compost units, with both conventional composting and vermiculture (worm compost). Economic analysis of the original designs shows that they are simply too expensive for the amount of compost that they produce and benefit that they bring and are not economically worthwhile.

However, composting is established practice in many parts of the world and can be worthwhile if the costs are kept low. The project has now ceased constructing worm compost units and is developing revised low-cost designs for conventional compost.

Female-focussed interventions

The overall objective of the project is to contribute to Output 6 of the Country Programme Document: *Improved economic livelihoods, especially for vulnerable populations and women*. Whilst there is no overall target for the percentage of female beneficiaries, several individual targets for Outputs 1 & 2 include 30 % women¹², and a number of targets for the new Output 3 aim for 20 % women¹³.

Rural Afghan society currently has strong gender roles, such that it is practically unthinkable for a woman to run an orchard or commercial greenhouse. Therefore, in order to include women, the project developed a number of specific female-focussed interventions: micro-greenhouses, kitchen gardens, beehives and, recently added, value addition through the home production of jams and pickles.

There was also a suggestion that such interventions could help to support household incomes during the early years of orchard establishment, when the family would have lost the income from the previous field crop and not yet gained a new income from the fruit or nuts. This is not seen as a convincing argument, given that (a) there will not be a large drop in income if orchard recipients successfully grow intercrops between the young trees, and (b) this logic would require focussing these interventions specifically on households that had received an orchard and not a greenhouse, which has not been the case.

¹² 1.1.2. Lead Farmers; 1.2.2. Agro-business training; 1.2.5. Value-added training and equipment; 1.3.2. Farmer Field Schools; 2.2.2. CDC training in community mobilisation; 2.3.3. CDC training in project implementation and monitoring.

¹³ 3.1.5. Horticulture pre- and post-harvest training; 3.2.1. training of traders in group collection; 3.2.11. training of traders in documentation requirements.

The main question is whether these female-focussed interventions make any significant contribution to the project's stated purpose "to prove the viability of high-value agricultural-based interventions in improving local economies in Farah and Badghis as a sustainable alternative to illicit crop cultivation". So far, the project has failed to establish any theoretical or empirical link between these female-focussed interventions and a reduction in poppy cultivation, and so it has been decided to discontinue these activities.

3.2.2 Reduced opium production

The project has a clearly-stated purpose of reducing opium cultivation in the treatment communities, which raises two key questions:

- *How would high-value crops lead to a reduction in the poppy area?*
- *How will the project tell whether changes in the poppy area are due to project interventions or other factors?*

Annex 7, repeated from the previous report, looks at these two questions in detail. The main issues are summarised here.

Mechanisms for high-value crops to reduce poppy area

The Theory of Change set out in the Project Document shows how improved production and marketing of high-value crops, supported by improvements in agri-business infrastructure, should lead to "Improved household income with less dependency on illicit cultivation". An important question is whether increased income from high-value crops will lead to farmers reducing their area of opium poppies, or whether they will simply grow high-value crops as well as opium poppies.

As set out in the previous report, there are at least three ways in which an increase in high-value crops might lead to a decrease in poppy area are:

- 1) ***Resource diversion***: Farmers are no longer able to grow opium poppies because their land, labour or capital are tied up by high-value crops; the analysis of section 3.1.1 and Annex 6 looks at whether orchards and greenhouses are sufficiently profitable to divert resources away from poppy production¹⁴.
- 2) ***Dependency reduction***: Farmers could still grow opium poppies, and it might be profitable for them to do so, but they do not need to grow opium to survive because they get an adequate income from high-value crops; this seems to be the central idea in the project objective, with its reference to "less dependency on illicit cultivation".
- 3) ***Conditionality and coercion***: Farmers must stop growing opium poppies in order to receive benefits from the project, and those who get or hope to get benefits from the project may put pressure on others now to grow poppy and jeopardise these plans¹⁵.

¹⁴ Resource diversion corresponds to some extent with the idea of "Crop substitution" as discussed in the alternative development literature. However, the term "crop substitution" suggests an emphasis on the land resource, whilst in this project some of the interventions, particularly greenhouses, are more likely to divert the household's labour.

¹⁵ In a meeting with the beneficiaries from Badghis during the previous evaluation, they said that the main reason they had stopped growing poppies was because they to sign a commitment in order to participate in the project. In this evaluation, nobody mentioned a written commitment, but the idea that project support was conditional on not growing poppy was single most common reason given for people stopping poppy cultivation.

Rand Corporation (2015) concluded that “higher rural incomes ... appear to be a necessary, if insufficient, condition for substantially curtailing the cultivation of illegal crops”, supporting the idea of dependency reduction coupled with wider socio-economic change. The same report reviewed the experience of conditionality and concluded that is not an effective means of reducing narcotics production; in terms of this project, it is quite possible that the treatment villages will resume poppy production once they stop receiving new benefits from the project.

In the previous evaluation, it was only possible to examine the theoretical basis for each of these mechanisms since no hard data were available. For this evaluation, a field survey of 100 farmers was conducted to look at how and why their poppy cultivation had changed, and to see what evidence existed for and against each of these three possible mechanisms. The results are presented in section 6 and discussed in section **Error! Reference source not found.**

Measuring and interpreting changes in poppy area

As a central part of its monitoring strategy, the project is utilising remote sensing and field surveys through UNODC’s *GLOU34: Illicit Crop Monitoring Project* as a means to measure the CBARD projects’ impact on cultivation of opium poppy¹⁶. A baseline study of all treatment and control communities was conducted for both projects in April-May 2017, and the survey was repeated in April-May 2018 for the mid-term report. Analysis was very time consuming and the report was not released until September 2019, after the previous evaluation.

By the time the mid-term poppy survey was conducted in spring 2018, CBARD-West had already distributed a number of orchards, greenhouses and other interventions, so the response of farmers in those treatment communities may be due in part to the economic impact of project interventions. However, in CBARD-East the communities had been selected and the project introduced, but no interventions had yet been delivered. Thus any detected response to the project in CBARD-East must be due to expectations, conditionality or coercion, and not to the direct impacts of income generation or resource diversion.

This is the summary of the UNODC report on CBARD-West:

From 2017 to 2018 there was a large reduction in opium poppy cultivation in particular in Badghis province. However, no (statistically significant) differences in opium poppy areas were observed between treatment villages (i.e., villages selected for receiving the interventions) and control villages (i.e., villages not receiving interventions which are used for comparative purposes).

Independent (statistical) analyses were conducted for:

- all villages in CBARD-W;*
- villages in Badghis province only;*
- villages in Farah province only;*
- irrigated land only and non-irrigated land only (in Badghis province, as in Farah province all the agricultural land was irrigated).*

In all these cases, the results were similar (no statistically significant differences in opium poppy areas between treatment and control villages during the period 2017-2018). As such, there were still no evident effects of the alternative development interventions in opium poppy cultivation by 2018.

¹⁶ Project Document page 21: VI. MONITORING AND EVALUATION; Opium Production Monitoring Agent.

However, both provinces were (severely) affected by a drought in 2018 and CBARD-W indicated that one of the interventions were operative or in production (generating income) by April/May 2018. As such, this situation is expected to change in the future (2019 onwards) following (at least a partial) recovering from the drought and after the interventions “mature” and start generating sustainable income for farmers.

A complete list of interventions per village, including scope (number of beneficiaries inside the village), should be provided by CBARD in order to conduct the final impact assessment in 2020/2021.

The summary for CBARD-East is as follows:

From 2017 to 2018, there was a larger reduction in opium poppy areas in treatment villages (i.e., villages selected for receiving the interventions) in comparison to (the slight reduction in opium poppy areas in) control villages (i.e., villages not receiving interventions which are used for comparative purposes). These results were statistically significant.

In addition, the changes in opium poppy cultivation were different among districts. For example, in Achin, Chaparhar, and Kot districts large differences in opium poppy areas were observed between treatment and control villages; while in Khugyani, Rodat and Sherzad districts no major differences in opium poppy areas were observed.

The reasons for those changes depend on the type and magnitude of the interventions received in the treatment villages, as well as the possible expectation generated by the CBARD-E project among the population. A complete list of interventions per village, including scope (number of beneficiaries inside the village), should be provided by CBARD in order to conduct the final impact assessment in 2020/2021.

In other words, the survey failed to detect any impact of the project on poppy production in Badghis and Farah provinces of CBARD-West, or in half of the districts of Nangarhar in CBARD-East, but did find that participation in the project was associated with a statistically significant reduction in poppy production in the other half of the districts of Nangarhar in CBARD-East.

If the impact of the project were mainly through income generation and/or resource diversion, then the results might be expected to be the other way round, with the greatest impact in CBARD-West where interventions had already been delivered. However, the survey took place only a few months after those interventions were delivered, and several years before farmers will see significant benefits from their new orchards, so the income-generation impact could be expected to be only modest at that stage.

What the data do suggest is that the project had a significant impact on farmers' poppy-growing decisions in parts of Nangarhar due to come combination of expectations, conditionality and coercion – an issue that was investigated further in the field survey.

The overall levels of poppy production each year (as a percentage of total cultivated area, measured from satellite images) are shown in the following table:

Province	Communities	2017	2018
Badghis	All	40 %	10 %
Farah	All	3-5 %	3-5 %
Nangarhar	Control	42 %	40 %
	Treatment	49 %	30 %

Two main things stand out from this table:

1. There are big differences in poppy area from province to province, initially covering almost half of the cultivated area in Badghis and Nangarhar provinces but less than 5 % in Farah.
2. There was a general reduction in poppy cultivation from 2017 to 2018 in the two high-poppy provinces, but a much greater fall in Badghis than in Nangarhar.

This suggests that factors unconnected with the project, such as the opium price and the security situation, have a large influence on poppy cultivation. It will therefore be important to separate out the impact of the project from that of these exogenous factors.

The previous report noted the key point that the highly cyclical opium market would result in year-to-year changes in the poppy area even without the project. Given that CBARD began when opium prices were at their lowest, it is quite likely that the poppy area in control communities will fall for a year or two and then start to increase when prices rise again. When decision-makers come to review the future results of UNODC surveys, the question they should ask is not whether or not the poppy area in treatment villages fell compared to its level before the project, but whether it fell relative to what would have happened without the project, as indicated by the treatment communities. Annex 7 (prepared for the CBARD-West mid-term evaluation and attached again here) shows a simple graphical way to present the project impact in a way that stakeholders can understand.

Deeper understanding of the processes in treatment and control communities will be gained through repeating the baseline socio-economic survey at the end of the project.

3.2.3 Beneficiary households and individuals

The Inception Report states the revised aim of the two CBARD projects is to “directly benefit an estimated 33,240 households (232,680 beneficiaries)”. The figure of 33,240 households is the estimate from the UNODC baseline survey for the total number of households in the treatment communities, and the estimate of 232,680 beneficiaries applies the assumption of an average 7 members per household¹⁷. The survey also indicates that these communities have in total around 100,000 jeribs (20,000 ha) of land, of which about 40,000 jeribs is irrigated.

¹⁷ Rand Corporation (2015) quotes an average of 11 people per rural farm household, saying this is in line with other studies. This would increase the population estimate for the 70 treatment communities to 365,000.

As noted in the previous report, the project cannot realistically provide direct benefits to 33,240 households, as it would require supporting every single household in the treatment communities, whereas the selection criteria for most interventions require beneficiaries to have at least a specified minimum area of land, access to irrigation, and willingness to participate and to make the requisite contribution in cash or in kind. Given that some households have no significant area of land at all, either keeping livestock, working outside agriculture or serving as day labourers for farmers with land, it is clear that a project on high-value crops could never directly benefit every household in the community. However, the project could realistically reach the large majority of people in the project communities through a Counter-Narcotics Campaign, though this has not yet been implemented to the extent planned.

In practice, project interventions other than the Counter-Narcotics Campaign have the more realistic aim of directly benefitting approximately 2,500 households (17,500 beneficiaries), whilst indirectly benefiting 25,000 households (182,000 beneficiaries).

3.3 Project design

The project design and goals set out in the Performance Monitoring Plan of the Project Document may be summarised as follows; strikethrough is used to show changes agreed in the Inception Report:

1. High-value crops

1.1. Identification of communities & crops

- 1.1.1. Identify 100 treatment & 50 control communities
- 1.1.2. Identify high-value crops; identify Lead Farmers
(~~30%~~ 20 % women; ~~30%~~ 20 % marginalised minorities)
- 1.1.3. Develop value chains for identified high-value crops
- 1.1.4. Identify & contact relevant input suppliers, farmer groups, processors & traders
- 1.1.5. Map financing opportunities in all 100 treatment communities
- 1.1.6. Identify & select Micro-Finance Institutions

1.2. Agro-business models

- 1.2.1. Develop agro-business training modules
- 1.2.2. Deliver agro-business training to 2,500 people
- 1.2.3. Provide 2,500 orchard tool packages
- 1.2.4. Deliver business development plans to 2,500 people in groups
- 1.2.5. Provide value-adding equipment & training
- 1.2.6. Provide business advisory services to 120 businesses
- 1.2.7. Enhance business skills of 120 businesses via fairs & international visits
- ~~1.2.8. Provide loans to 400 businesses via credit institutions (access-to-finance component now removed)~~

1.3. Agricultural inputs & training

- 1.3.1. Train 100 Lead Farmers (20 % women; 15 % marginalised minorities)
- 1.3.2. Implement 100 Farmer Field Schools hosted by 2,500 people and covering:
 - 1.3.2.1. Compost making for 1,500 people
 - 1.3.2.2. Integrated Pest Management for 2,500 people
 - 1.3.2.3. Mulching for 2,500 people
 - 1.3.2.4. Intercropping for 2,500 people
 - 1.3.2.5. Climate change risk awareness for 100 communities
 - 1.3.2.6. Post-harvest management for 100 communities

1.4. APY monitoring system (Area, Production, Yield)

- 1.4.1. Conduct 2 baseline surveys of 100 communities and build database
- 1.4.2. Conduct 4 biannual surveys
- 1.4.3. Analyse biannual surveys and maintain database

2. Agro-business

2.1. Needs assessment

- 2.1.1. Assess community infrastructure needs
- 2.1.2. Analyse investments
- 2.1.3. Select priority investments

2.2. Community mobilisation for infrastructure projects

- 2.2.1. Develop training modules for CDCs
- 2.2.2. Deliver training to 2,500 people in CDCs (30 % female)
- 2.2.3. Run mobilisation campaigns in 100 communities

2.3. CDC project management

- 2.3.1. Conduct training needs assessment in 100 communities
- 2.3.2. Develop training modules
- 2.3.3. Deliver training to 2,500 CDC members in 100 communities

2.4. Community agro-business infrastructure

- 2.4.1. Implement 300 agricultural infrastructure projects (e.g. irrigation)
- 2.4.2. Implement 3 community agro-business infrastructure projects (e.g. packaging centres)

2.5. Counter Narcotics campaign to reach 28,500 households

- 2.5.1. Develop quarterly public awareness campaigns for 100 communities
- 2.5.2. Run quarterly public awareness campaigns in 100 communities
- 2.5.3. Provide phone-based advisory messages to 28,500 households

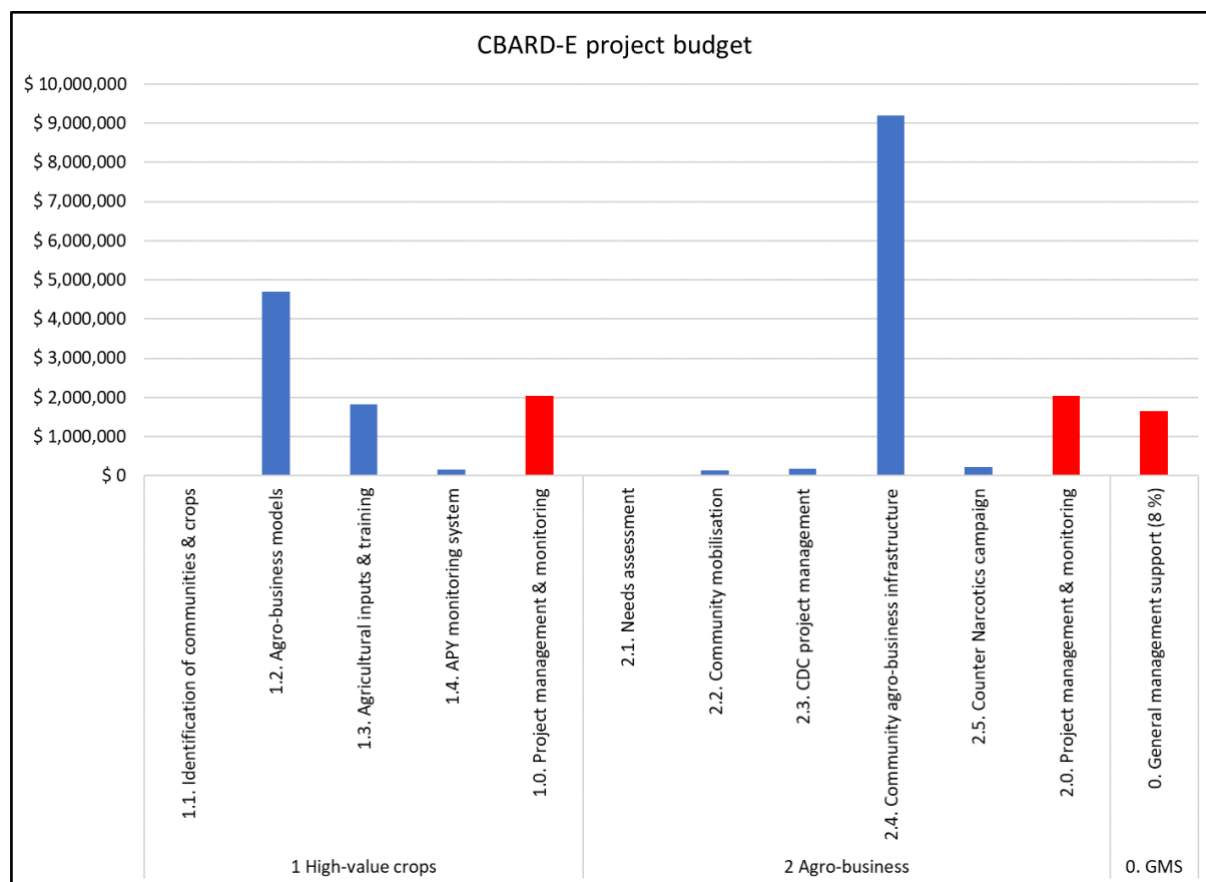
The Project Document was substantially revised in June 2019 to add a new Output 3 on market development and deleted a number of activities on agro-business development and access to finance. However, these new activities have yet to be implemented, so this mid-term evaluation focusses on the list of activities from the original Project Document and Inception Report, as set out above.

3.3.1 Project budget

The budget allocation in the Project Document is as follows:

Component & Sub-component	Budget
1 High-value crops	\$ 8,705,260
1.1. Identification of communities & crops	\$ 0
1.2. Agro-business models	\$ 4,690,000
1.3. Agricultural inputs & training	\$ 1,820,000
1.4. APY monitoring system	\$ 150,000
1.0. Project management & monitoring	\$ 2,045,260
2 Agro-business	\$ 11,784,260
2.1. Needs assessment	\$ 9,000
2.2. Community mobilisation	\$ 125,000
2.3. CDC project management	\$ 185,000
2.4. Community agro-business infrastructure	\$ 9,200,000
2.5. Counter Narcotics campaign	\$ 220,000
2.0. Project management & monitoring	\$ 2,045,260
0. GMS	\$ 1,639,162
0. General management support (8 %)	\$ 1,639,162
Grand Total	\$ 22,128,682

The following graph shows the same data, with operations in blue and project management in red:



Project management and monitoring accounts for 26 % of the total; of the actual operations, three account for the large majority of the budget allocation:

- Community agro-business infrastructure: 42 %
- Agro-business models: 21%
- Agricultural inputs & training: 9 %

The remaining activities together represent 3% of the total budget.

3.4 Project status

This part of the report begins with a short overview of the project activities so far, and then notes how project areas under CBARD-East compare with those in CBARD-West. This is followed by a detailed analysis of the different kinds of interventions and the beneficiaries who received them, followed by sections on timing and expenditure. The final section presents and analyses the organisational structure of the project.

A detailed description of each kind of physical intervention is given in Annex 2, together with photographs, numbers and costs.

3.4.1 Project activities so far

The previous CBARD-West project commenced in November 2016, had staff in place by January 2017, and submitted its Inception Report in September 2017. By then it had been agreed to extend activities into Nangarhar province under CBARD-East and so the final version of the Inception Report covers both projects. A number of project reports, e.g. on access to finance, also cover the two projects, as do many of the project's strategic decisions.

The CBARD-East Project Document was formally signed after the end of the inception period, on 24th January 2018, with a project start date of January 2018 and an end date of December 2020.

Several amendments to the Project Document were agreed on 13th June 2019:

- The project end date was extended from December 2020 to April 2022;
- A new Output 3 was added: *Potential Markets (including national and international) for CBARD products established.*
- A number of activities on agro-business development and access to finance were deleted from Output 1.

Also, the Ministry of Counter-Narcotics, an original project partner, has now been disbanded.

So far, the project has:

1. **Studied** the availability of finance¹⁸, the value chains for various high-value crops¹⁹, and the security situation in prospective project areas.
2. **Selected** 100 treatment communities and 49 control communities in 6 districts of Nangarhar province²⁰, and **selected** 86 male and 14 female Lead Farmers from the treatment communities (14 % female).
3. **Identified** 2 perennial crops and 2 greenhouse vegetable crops as being of high value and sufficiently well established in the selected districts²¹, and **selected** 122 input suppliers, 118 cooperatives²² and 57 SMEs as potential partners (CBARD-W and CBARD-E together).
4. **Developed** 17 support packages for individual farmers²³ and 1 for communities²⁴.
5. **Distributed** tools, saplings, seeds and fertilisers through the farmer support packages, so far planting 1,054 jeribs of orchards.
6. **Built** 180 greenhouses and 230 micro-greenhouses and begun work on irrigation structures through the farmer and community support packages.
7. **Formed** 114 farmer groups and used them as the basis for extension via field schools (CBARD-W and CBARD-E together).
8. **Trained** farmers in various topics related to the support packages.
9. **Abandoned** initial plans for a microfinance component and for AgriBusiness Centres, based on the findings of the finance studies.

Comparing the timing of main interventions under the two projects:

- Both projects began establishing orchards in spring 2018, and CBARD-East added further area in autumn 2018. Neither project managed to create any new orchards in spring 2019, due to difficulties in procuring saplings, but CBARD-East resumed planting in autumn 2019.
- CBARD-West constructed a lot of greenhouses autumn-winter of 2017/18, some the following spring, and then completed a large number in the second half of 2018.

¹⁸ *Financial Mapping, Second Report*. Afghan Agro Services, October 20th, 2018.

Off-Farm Employment and Access to Finance Report. Karim Merchant, September 6th, 2017.

¹⁹ Value chain study of high value horticultural crops and the required agri-based infrastructures and mapping of existing financing opportunities. Afghan Agro Services, December, 2018.

²⁰ Achin, Chaparhar, Khogyani, Kot, Rodat & Shirzad districts. At the time of the Inception Report, the UNDSS Security Risk Level was High for "Rodat" and Kot, and "Extreme" for the other four districts.

²¹ Pomegranates & citrus fruit; greenhouse tomatoes & cucumbers.

²² The 4th Quarterly Report of 2018 stated that all of these cooperatives had stopped functioning, so the project was no longer working with them.

²³ (1) Rehabilitation of existing orchards; (2) Establishment of new orchards; (3) Trellising of existing grapes (4) Construction of large & small greenhouses; (5) Supply of tools & equipment to farmers; (6) Dry land pistachio cultivation (7) Demonstration orchards at medium & high density; (8) Vegetables seeds for intercropping; (9) Supply of tools & equipment (10) Supplies for Integrated Pest Management; (11) Demonstration initiatives of organic farming; (12) Re-planting & gap filling of new orchards & pistachio plantations; (13) Construction of raisin drying houses; (14) Zero-energy cold stores; (15) Beehives; (16) Value-addition (preservation) of fruits and vegetables; (17) Demonstration compost units, conventional and vermiculture.

²⁴ (1) Irrigation improvements.

CBARD-East completed 170 greenhouses in the second quarter of 2019 and 10 in the fourth quarter of that year, but not in any other quarter.

- Overall it can be said that CBARD-East has caught up with CBARD-West with respect to orchards but is following 12-18 months behind with greenhouses. Therefore the economic effects of orchard interventions under CBARD-East may be expected to start from spring 2018, and those of greenhouses from spring 2019.

3.4.2 A typical project area

Section 3.3.2 of the previous report presented and discussed a satellite image of one of the districts in Badghis province where the CBARD-West project operates. It was not possible to repeat this exercise for CBARD-East as the original GIS specialist had left the project and the replacement was not yet familiar with the systems, but it is believed that the situation is reasonably similar in Nangarhar province in terms of the size and layout of communities and household plots. The main exception is that Nangarhar is somewhat warmer and drier, so farmers depend much more heavily on irrigated land (amongst the 100 respondents of the field survey, 95 % of agricultural land was irrigated; see section 6.6).

3.4.3 Interventions and beneficiaries

For the previous evaluation, the consultant prepared a comprehensive database of project activities based on data provided by the monitoring team. This time, rather than creating the database himself, he focussed on showing the team how they could develop and maintain the database themselves. Therefore, the summary of activities and results on the following page is taken from the table prepared by the team and included in the Quarterly Progress Report for the fourth quarter of 2019 as *Annex 4: CBARD-E updated database of interventions*.

Interventions (1 ha = 5 jeribs)	NANGARHAR								
	Project Target	Cumulative Achieved	2018 Target	2018 Completed	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2019 Completed
# of commercial greenhouses constructed	389	180 (46%)	190	0	0	170	0	10	180
# of micro greenhouses constructed	712	230 (32%)	230	230	0	0	0	0	0
# of raisin houses constructed	0	0 (n/a)	0	0	0	0	0	0	0
# of cold storage units constructed	0	0 (n/a)	0	0	0	0	0	0	0
# of jeribs of orchards established	910	1,054 (116%)	230	330	0	0	0	723.5	723.5
# of jeribs of orchards rehabilitated		0 (n/a)		0	0	0	0	0	0
# of jeribs of grape trellised	20	0 (0%)	10	0	0	0	0	0	0
# of kitchen gardens established		0 (n/a)		0	0	0	0	0	0
# of compost units constructed	87	0 (0%)	36	0	0	0	0	0	0
# of vermi-compost units constructed		0 (n/a)		0	0	0	0	0	0
# of irrigation projects implemented	50	0 (0%)	20	0	0	0	0	0	0
# of beneficiaries received gender-sensitive agro-business development trainings (BDT) (1.1.4)	2,000	1,628 (81%)	1,170	1,170	0	458	0	0	458
# of beneficiaries received planning, implementation, monitoring and gender training (1.1.4)	2,000	500 (25%)	300	50	0	450	0	0	450
# of beneficiaries attended Farmers' Field School (FFS) (1.3)	2,000	451 (23%)	220	221	0	0	0	230	230

In the column “Cumulative achieved” the figures in brackets (added for this report) show the percentage of target value that has already been achieved:

- **Green** denotes that more than 75 % of the final project total has already been achieved and so the project is on or ahead of target. This covers two activities: **orchard establishment** and **agro-business training**.
- **Amber** denotes activities where 25-75 % of the total has been achieved so far, and thus the target may be reached by the end of the project. This covers **commercial greenhouses**, **micro-greenhouses**, **Farmer Field Schools** and **training in planning, implementation & monitoring**.
- **Red** denotes activities where less than 25 % of the final target has been reached (in practice, 0 %) and so the project appears to be at risk of failing to meet its targets. These are:
 - **Grape trellising**;
 - **Compost units** (activity now deleted);
 - **Irrigation projects** (these take some time and so completion might be concentrated in the last quarters of the project, but the fact that the 2018 target of 20 completed projects has still not been met one year later is cause for concern).
- **Grey** denotes that no quantitative target was set and so a percentage cannot be calculated. This covers:
 - **Raisin houses, cold stores** and **orchard rehabilitation**, where none have yet been completed;
 - **Vermiculture compost units** (activity now deleted).

To the red list of activities seriously behind target might be added activities that are shown in the Performance Monitoring Plan but not currently included in the project database. This list includes the following activities where little or no progress has yet been reported:

1.1. Agro-business models:

- 1.1.6. Identify & select Micro-Finance Institutions (activity now deleted);
- 1.2.6. Provide business advisory services to 120 businesses;
- 1.2.7. Enhance business skills of 120 businesses via fairs & international visits;
- 1.2.8. Provide loans to 400 businesses via credit institutions (activity now deleted).

2.5. Counter Narcotics campaign to reach 28,500 households:

- 2.5.1. Develop quarterly public awareness campaigns for 100 communities;
- 2.5.1. Run quarterly public awareness campaigns in 100 communities;
- 2.5.1. Provide phone-based advisory messages to 28,500 households.

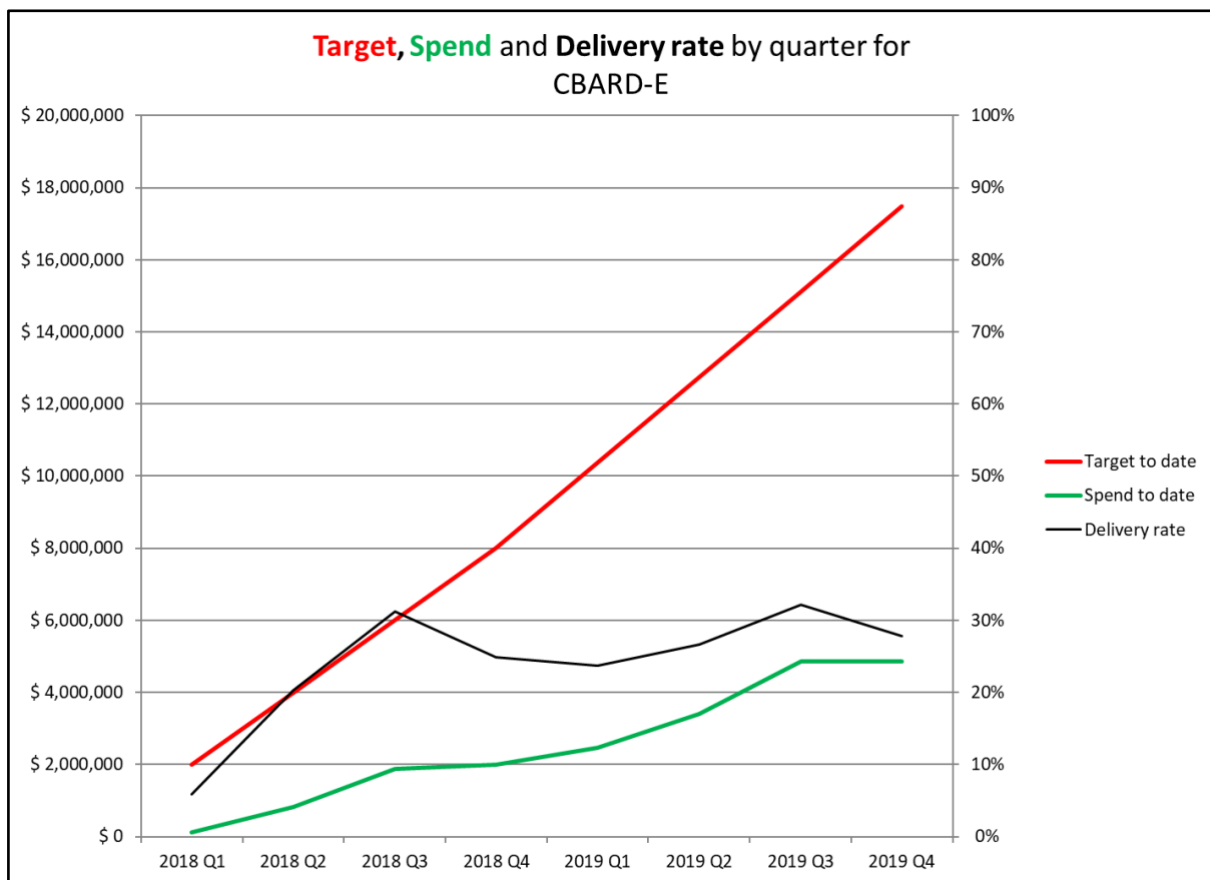
In summary, the project seems to be seriously behind target in three main areas:

- **Irrigation projects** – here the issue seems to be the slow pace of design and implementation for these relatively complex projects;

- **Agro-business models** – where project studies and discussions with stakeholders suggest that it will be quite difficult to make progress, in part because there are no finance organisations operating in the project districts and none that expressed interest to start working there.
- **Counter Narcotics campaign** – where the project has so far failed to deliver, in part due to difficulties in recruiting good staff.

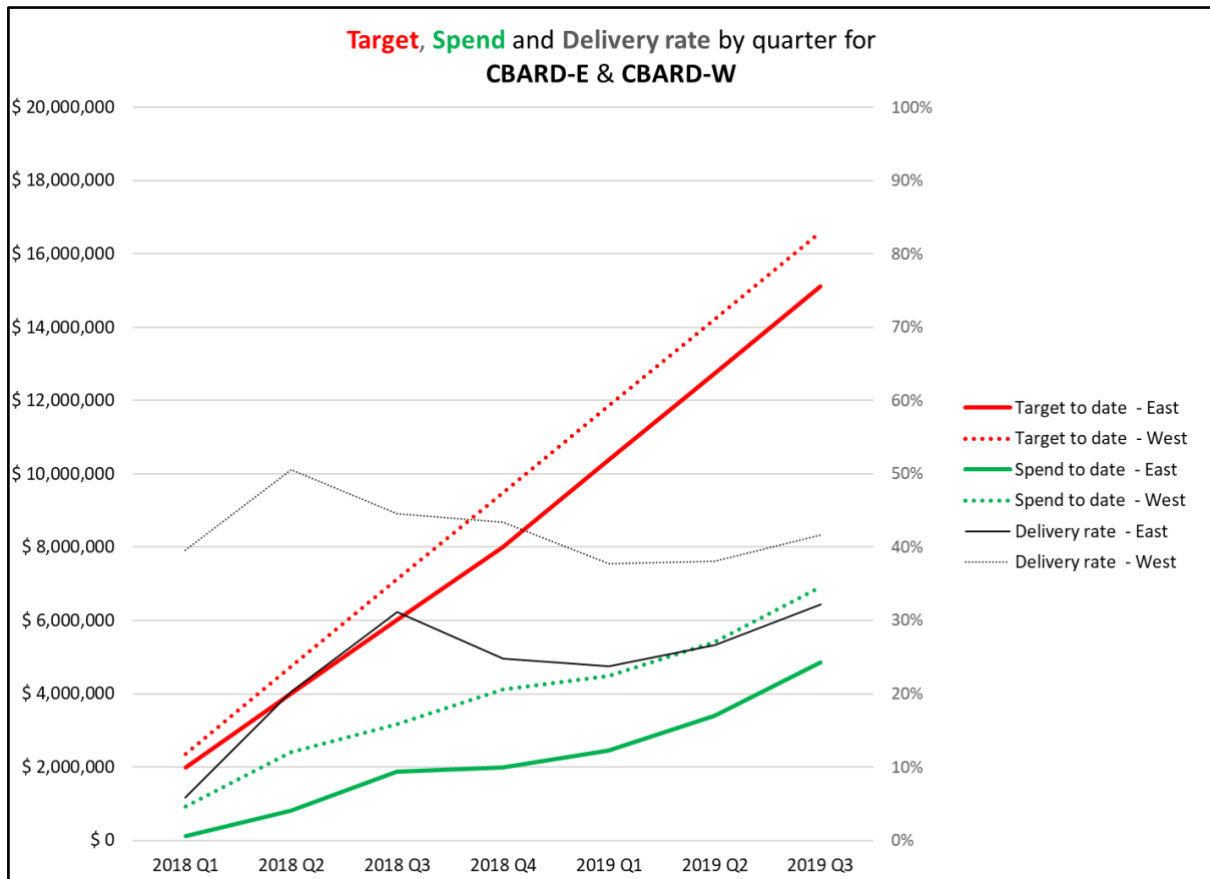
3.4.4 Project expenditure

The following chart shows **actual project expenditure** each quarter, taken from the Quarterly Progress Reports, and compares it with **target expenditure** assuming that the overall budget should be disbursed at a constant rate over the lifetime of the project; the black line shows **delivery rate**, i.e. cumulative expenditure as a percentage of target:



This shows that delivery rate was very low for the first two quarters as the project was getting started, but even since then has struggled to get above 30 %.

The following chart repeats these data and add the equivalent (dotted) lines for CBARD-West to see whether this problem is specific to Nangarhar province or affects both CBARD projects:



The patterns of disbursement over time are very similar for the two projects, but that CBARD-West has achieved significantly higher disbursement throughout, usually in the range of 40-50%. It can be concluded that both projects are performing poorly, disbursing at less than half the target rate, but the problem is more pronounced for CBARD-East.

3.4.5 Project organisational structure

The previous report described and analysed the project structure at central, province and district level, and made the following recommendation:

Strengthening vertical teams and delegation

The CBARD projects have a rather flat management structure, with one Project Manager responsible for 21 people in Kabul plus a further 50 in the three provinces with their respective Field Coordinators. The project should formalise a second management tier consisting of the five vertical teams that already exist down to province or district level, namely: Administration & Finance; Engineering; Agronomy and Extension; Monitoring & Evaluation; and Economics, Finance & Marketing.

One member of each vertical team should be designating as team leader and given responsibility for drawing up and implementing a workplan for their team in line with the overall project workplan. Each team leader should hold regular management meetings with their team and report to the Project Manager in a weekly meeting of team leaders. Normal day-to-day management of the teams should be delegated to the team leaders, allowing the

Project Manager to concentrate on strategic issues and managing the three Provincial Field Coordinators and the communications team.

In addition, the project should consider creating a post of Deputy Project Manager to take some of the management workload and allow smooth operation of the project when the Project Manager is away or busy.

Several changes to staffing and management were made in the course of 2019:

- The original project manager resigned and was replaced.
- The Regional Coordinator for Nangarhar province was dismissed following investigation into alleged financial irregularities. No replacement has yet been appointed.
- The central team has been restructured to allow greater delegation. This involved creation of a new Deputy Project manager post and reorganisation of the remaining staff into three main units (Programme Support Unit, Operations Unit and Technical Unit), each with a new Head of Unit. None of these new posts has yet been filled.

- The overall team was enlarged through addition of the following 22 new posts, including those noted above:

CBARD Project Management:

1. Deputy Project manager

Programme Support Unit

2. Head of unit
3. Monitoring coordinator
4. Communications officer
5. MAIL liaison officer

Operations Unit:

6. Head of unit
7. Procurement officer
8. Contract management & procurement assistant
9. HR assistant
10. Senior audit & control specialist
11. Driver

Technical Unit:

12. Head of unit

Badghis provincial office:

13. Senior field engineer
14. Contract management & procurement officer
15. M & E associate 1
16. M & E associate 2

Farah provincial office:

17. Senior field engineer
18. Contract management & procurement officer
19. M & E associate

Nangarhar provincial office:

20. Contract management & procurement officer
21. M & E associate 1
22. M & E associate 2

- The first 12 posts are based in Kabul and the other 10 in the respective provincial offices.
- It has often been difficult to recruit good staff when positions fall vacant or new posts are created: approximate calculations from the 2020 HR plan show 113 positions of which 82 (73 %) are currently filled, though many of the 31 vacant places are newly-created posts for which recruitment has not yet begun.
- The percentage of women in the team has decreased as some found it hard to fulfil their roles and so resigned; the project then had considerable difficulty in recruiting female staff to fill empty and new posts. Only 4 of the current 82 staff (i.e. 5 %) are female.

The revised project organigram is attached as Annex 9, with red boxed denoting new posts.

UNDP management

UNDP's oversight and project management role is exercised by a full-time ***Programme Analyst***, reporting to the ***Head of the Livelihoods and Resilience Unit***. UNDP also directly contracts two international part-time consultants – the ***Chief Technical Advisor*** and the ***Reporting and Statistics Expert*** – who form part of the project team. UNDP is responsible for quality assurance, with regular monitoring carried out by the project. For financial transactions, procurement and control are carried out by MAIL, with just the final payment step carried out by UNDP through its established IT and administrative systems, but UNDP does quality assurance of all payment documents through the UNDP ***Programme Finance Analyst***.

It has now been agreed to add a new international position of Programme Coordinator, who will be based in MAIL to support the CBARD Project Manager and act as the direct reporting point for the new project to be implemented by Roots of Peace²⁵. This post has not yet been filled.

Assessment

The restructuring to allow greater delegation is in line with the recommendations of the previous report. However, as the new managers have not yet been appointed, it is not possible yet to assess how effective this change will be.

The previous report did not recommend any large increase in staffing, since the main impression was not that the project was short of staff, but that the staff were not working very efficiently, partly because of poor management and partly due to lack of experience and capacity in some of the individuals employed. Procurement clearly was and is a bottleneck, so the recruitment of five new staff in this area should be beneficial. For the other positions it is questionable whether additional staff can make up for poor management, so the success of the staff expansion will largely depend on the success of the new management structure and approach.

The recruitment of an international Programme Coordinator to work full-time in MAIL should give significant support to the Project Manager and the team overall, though the outcome in practice may depend on the character of the Programme Coordinator and on how well he or she and the Project Manager work together.

²⁵ As this project has been contracted directly by UNDP, it must report to a UNDP staff member rather than to MAIL.

4 Findings of third-party field monitoring and spot checks

As part of UNDP quality assurance role and in order to get a better idea of what is really happening on the ground, UNDP conducts third-party field monitoring and spot-check through a contracted company. This evaluation reviewed all reports available so far for both East and West to help examine which issues are specific to the CBARD-East project and which apply more generally; these reports are:

- Final Spot Check report for CBARD-East project; January 01, 2018 to September 30, 2018
- Final Spot Check report for CBARD-West project; January 01, 2018 to September 30, 2018
- Draft 3rd party Field Monitoring and Spot Check report for CBARD-East Project; January 01, 2019 to July 31, 2019
- Draft 3rd party Field Monitoring and Spot Check report for CBARD-West Project; January 01, 2019 to July 31, 2019

The two draft reports for 2019 are currently being considered by the project and may be subject to revision.

Risk ratings

All spot check reports contain two consistent tables of risk ratings for internal controls at project and CDC level:

Issue	2018 final		2019 draft	
	CBARD-E	CBARD-W	CBARD-E	CBARD-W
Aggregate score: higher value = higher risk ²⁶ (Low=1, Medium=2, High=3)	13	15	15	16
Internal controls at project level				
1 Human Resource Process	High	High	Medium	Medium
2 Procurement process	Low	Low	Medium	Medium
3 Monitoring program activities	Low	Low	Low	Low
4 Fixed Assets	Low	Medium	Medium	Medium
Internal controls at CDC level				
1 Selection of CDCs and beneficiary	Low	Medium	Medium	High
2 CDCs procurements	High	High	High	High
3 Compliance with Project agreements by CDCs	High	High	High	High

²⁶ This is a simple way of aggregating the data, applied by the evaluator. It is not part of the spot-check reports.

The main conclusions from this table and relevant text in the reports are:

- There are high risks associated with the human resource process, mainly involving employment of relatives, accepting people who do not have the specified educational qualifications, and lack of documentary evidence to show that proper procedures were followed. This applies across both projects, though with some evidence that the situation is now improving.
- The procurement and monitoring processes are generally seen as low risk.
- Control of fixed assets is rising to medium risk, though the text indicates that this is often simply because asset registers are not updated as assets become worn or damaged over time.
- Selection of CDCs and beneficiaries is generally medium risk. The text in the reports show multiple cases of CDC members and their relatives benefiting from project interventions such as greenhouses. There does not seem to be a clear project policy on whether or not this is permitted.
- Procurement and implementation by CDCs are seen as high risk for both projects and both years, suggesting that there is a fundamental problem in using CDCs in this way. The three spot check reports did not find a single example of a CDC with proper documentation for any project activities, so in most cases the monitors were unable to judge whether or not the correct procedures had been followed. The project team in Jalalabad reported that most CDC members are illiterate, so it is hardly surprising that they did not implement the relatively complex, paper-based systems that are routinely used to control procurement, implementation and payment.

Whilst it is not strictly correct to assign a quantitative score to qualitative data, the calculated aggregate scores show that:

- a) the two projects are very similar, with CBARD-West slightly higher risk than CBARD-East in both years;
- b) there was some increase in overall risk rating from 2018 to 2019 for both projects.

Specific issues

The spot check report for CBARD-East in 2018 shows a number of recurrent problems:

- The procurement process was influenced by the project office (7 of 16 CDCs);
- Interventions were given to CDC members or their relatives (2 of 16 CDCs);
- Improper greenhouse foundations; for commercial greenhouses the issue is usually under-delivery of cement, leading to weak foundations, whilst for micro-greenhouses there are usually no foundations and the pipes are sunk directly into the soil (13 of 16 CDCs).

The CBARD-East spot check report for 2019 has extended text sections dealing with a number of issues, including:

- Partial or late completion of greenhouses, with completion often taking almost one year rather than 45-90 days as per the contract;
- Poor quality materials (greenhouse pipes and plastic);

- Under-delivery (tools, saplings, seeds, cement). Seeds and saplings were fairly consistently under-supplied by around 25 %, suggesting a deliberate policy to cheat at a level that was unlikely to generate serious complaints by beneficiaries;
- Death of saplings – more than two-thirds of orchards had survival rates of 80 % or higher (average over 90 %), but nearly a third had high mortality (average around 50 %); this concentration of problems in some orchards suggests that it may not be a general problem of sapling quality or drought, but may have more to do with the level of care by individual farmers, or might possibly be due to delivery so late that the saplings could not be planted at the right time²⁷.

The reports for CBARD-West show exactly the same kinds of problems, indicating that many of the difficulties faced by the CBARD-East project being evaluated here are linked to the common project design, management structure and operating environment, rather than being specific to the team or conditions in Nangarhar province.

However, the project team has provided detailed responses to the two draft reports for 2019, with explanations for some of the apparent anomalies. They also highlight some areas where the reports appear to be factually incorrect, often because the independent monitors did not have or seek access to all of the relevant documentation. These responses are currently under discussion and the final versions of the reports will give a more definitive picture.

²⁷ The project has recently produced a report on “Survival rate of CBARD orchards in East and West in 2018”, which reports high levels of sapling death due to drought and conflict. The problem was highest in Badghis province, where around 62 % of saplings died, and lowest in Nangarhar, where the problems of drought and conflict were less severe and the death rate was reported as 25 % – very much in line with the range of numbers found by the field monitoring.

5 Field trip to Nangarhar

In order to get a better understanding of the project and develop an effective survey, the evaluator travelled to Nangarhar to meet the PAIL Director, the agriculture projects working group, the CBARD project team and an invited group of beneficiaries.

5.1 Meeting with PAIL Director

The Director of the Provincial department for Agriculture, Irrigation and Livestock (PAIL) was generally positive about the project, though complained that implementation could be slow and that some of the project team were not so good.

The PAIL structure included 3-9 monitoring staff in each district, equipped with motorbikes, plus staff who travel regularly from Nangarhar to visit different communities, usually alongside project staff.

He wanted more interventions to be delivered through CDCs, though this may have been as much about building political capital as improving project delivery. He also asked for more training and capacity building of DAIL (i.e. district) staff.

5.2 Meeting with working group

Nangarhar PAIL has organised a regular working group of projects involved in agriculture, with which the evaluator held a short meeting. Organisations represented included the “ENDO” horticulture development organisation, working with the Citrus Promotion Group, the Afghan National Growers’ Organisation (ANGO) and ICARDA; the USAID GRAN project; the NHLP project; the Horticulture Value Chain Development project; the MAIL Technical Support Advisor and a representative from the DAIL Planning Department.

It was clear that there are several projects doing similar things and following a similar model. This allows more beneficiaries to be reached, but also creates inter-project competition for inputs, particularly saplings, can cause a glut of similar produce to reach the market at the same time, and may restrict projects and donors from thinking more widely and creatively about how to achieve comprehensive economic development and a shift out of opium production. One participant observed that many greenhouses established in the past had failed, but projects had not learnt from the mistakes and continued to provide more greenhouses. The work being done with nurseries to ensure a reliable supply of high-quality saplings could bring significant benefit to several different projects.

The issue of irrigation also arose and was seen to be critical in letting farmers move away from opium poppies to higher-value but more water-sensitive crops.

5.3 Group discussions with beneficiaries

It was not considered appropriate to meet the male and female beneficiaries together, as has been done with beneficiaries from Nangarhar for the previous evaluation, but within the formal setting of the project office it was possible to hold discussions with a group of 12 female beneficiaries and then a separate group of 16 male beneficiaries. A first draft of the survey questionnaire was prepared before this trip, and the survey consultant used the opportunity to pilot it with several male and female beneficiaries whilst the discussion was taking place with the other group.

5.3.1 Female beneficiaries

All 12 female beneficiaries had received both micro-greenhouses and kitchen garden sets, six had also received beehives, and some had received training in home production of jam and pickles.

Greenhouses and kitchen gardens

On the micro-greenhouses, all said that they had received the greenhouse with its plastic covering, plus the seed, tool and fertiliser packages, and that the quality was okay. Most were producing for household use, but one had produced 15,000 vegetable seedlings and sold them at 1 Afghani each, generating an income of nearly \$ 200. None was producing tomato or cucumber plants for sale to project commercial greenhouses, which was seen as one of the possibilities for micro-greenhouses. All said that they had been able to buy inputs for the second season of production.

Neighbours had shown interest, with several creating their own kitchen gardens and one constructing a greenhouse with a home-made wooden frame.

Beehives

On the beehives, beneficiaries were each given two hives with bees, and some had later bought additional hives and populated them with swarms from the original hives. Some said that it was a problem to buy sugar to feed the bees over winter; it was understood that the problem was to afford the sugar, not to find it.

Value addition

Several of these women had also undergone training for the new value-added package (household production of jams and pickles) but equipment had not yet been distributed.

Community reactions

Many of the women said that they were widows and so did not need the approval of their husband or father to undertake these activities. However, several said that they felt uncomfortable going outside their walled compound to tend the greenhouse or bees, and asked whether the project could supply them with a cow or chickens, which they could keep inside the compound.

5.3.2 Male beneficiaries

Of the 16 male beneficiaries, 13 had received greenhouses and 6 orchards, with three people receiving both interventions. Two of the orchard beneficiaries had received more than the minimum 1 jerib (one got 2 jeribs and the other 2.5). One said that as well as a greenhouse and an orchard, he had also received two beehives and a micro greenhouse (presumably through a female family member) and had already expanded to six beehives.

Local economy, government presence and poppy production

In terms of the local economy, beneficiaries from Achin district said that a lot of people worked in the district capital, and so there was not a lot of poppy grown there. In Rodat there was said to be a strong Taliban presence and so pressure to grow poppy, but now that “the government had come to the village” (i.e. this project, implemented through MAIL), they preferred to grow legal crops. Beneficiaries from Sherzad said that their district bordered Pakistan and there had been no government presence for the last ten years, with opium processing taking place there.

Most said that this project was the first sign of the government that they had seen in the last ten years and were pleased that the government was finally giving them some support, though there were still places where the military could not go. They said that once people received greenhouses, they focussed on them and stopped growing poppy, but noted that only a small share of the community had actually received greenhouses. They also said that they needed improvements to the local irrigation systems, such as protection walls.

When asked how farmers might respond if opium prices returned to their previous high levels, they said it depended on the location and the options open to farmers, with poppy most likely to return in high and remote areas. Again, they noted that relatively few people had received support for the project and hence been given a means or reason to stop poppy cultivation. The overall impression seemed to be that they were reserving judgement, particularly on the orchards, and would see how things worked out before deciding whether or not to go back to poppy production.

Greenhouses

As well as greenhouse frames, plastic covering and the irrigation system, beneficiaries said they also received packages of seeds, fertiliser and pesticides for the first year. Irrigation water was normally supplied by electric pumps running from 3 kVA generators.

One said he had got a crop of 2,800 kg of cucumbers, plus another crop of tomatoes. Some farmers took their produce to market, whilst others sold to traders who came to their village.

Orchards

All these orchards were located in areas with irrigation, so they did not have serious losses from drought, but some lost plants to disease.

These farmers said that they did grow intercrops of tomatoes, watermelons and cucumbers, and that their land had previously been used for cotton, wheat, maize and poppy.

Suggestions and requests

The beneficiaries said that they were generally happy with the support they had received so far and would like to receive more. The top priority was seen as irrigation and better management of water, with some interested to introduce drip irrigation as well as to build new dams and intakes to improve the water supply.

Some mentioned a need for fencing to keep animals and children away from the orchards and greenhouses, and one said that he would like a heated greenhouse.

They also saw a need for livestock, particularly for women, and for more public awareness and training.

5.3.3 Overall impression from beneficiary discussion groups

There was a definite sense of “elite capture”, with a number of families having received several project interventions whilst most in the community had received none. Beneficiaries only mentioned how many interventions their own household had received, and it was not possible to tell whether close relatives had also benefitted.

It seemed that the beneficiaries had made a temporary decision to go along with the project and see how much benefit they could get from it, and then decide whether it was in their interests to return to poppy cultivation once the project ended.

The most negative factor was how few people in the community had received any direct benefit from the project, and hence been given any means or incentive to refrain from poppy production.

A number of beneficiaries, both male and female, indicated that they would prefer not to grow poppy, both for the health risk it brought to their families and for the company it caused them to keep. Therefore alternative crops or employment might not need to offer higher incomes than poppy, just to offer adequate livelihoods so that people had the choice.

The most positive factor was the oft-repeated phrase that “the government has come to our village”. If this can be built on and kept up over the years, not just with orchards and greenhouses, but with healthcare and education, security and jobs, then it really might move people permanently out of poppy production.

5.4 Meeting with Nangarhar project team

The whole project team assembled and presented in turn the work they had been doing.

The Business Development Services Officer, who had been in post since February 2018, said that he had introduced 35 beneficiaries to 15 traders through meetings held in the project office (i.e. an average of one introduction every 2-3 weeks).

The Horticulture Extension Officer was involved with running Farmer Field Schools in the villages, with 260 people trained so far.

The team explained that training so far had covered bee-keeping, Integrated Pest Management, greenhouse management, kitchen gardens, micro-greenhouses and food processing. They said that they had records of which beneficiaries had attended which training sessions, and a “Farmer Field Schools Tracker”, but were not immediately able to show any data.

The Monitoring & Extension Associate for Achin district was also the acting Female Extension Officer and reported travelling to the field three times a week, typically visiting 6 CDCs in one day and meeting around 12 beneficiaries.

The Finance Officer explained that he dealt with payment requests from CDCs and suppliers, preparing documents, assembling the appropriate commissions to approve them, and then sending the requests to the PAIL Director for signature.

The Field Engineer was involved with monitoring greenhouses and irrigation projects. He explained that technical preparations had been completed for seven irrigation projects, and was now working on the Bills of Quantities and contracts.

The Design Engineer reported designing ten irrigation projects, identified and requested by CDCs.

A second Field Engineer, hired in April 2018, was involved in working with communities and supervising greenhouses, micro-greenhouses and irrigation projects.

The Monitoring Officer said that he normally went to the field together with technical members of the team. He noted that most CDC members were illiterate, which made it hard for them to implement the administrative procedures required under the project.

Assessment

It is hard to gain an accurate assessment of a team from a single meeting and without seeing them in the field or looking at any of their outputs. However, the impression gained was that the team had come to substitute “busy-ness” for results and whilst they talked of records and

tracking systems, everything seemed to be a bit vague. This was particularly true of training, where nobody presented training manuals, materials or curricula.

To be fair, over two years the team had installed 180 greenhouses, 230 micro-greenhouses and 1,054 jeribs of orchards. Whilst the actual work was done by CDCs and suppliers, if each site had to be inspected beforehand, afterwards and possibly also whilst work was taking place, there could be more than 3,000 field inspections involved. The question is whether this work is being carried out efficiently and accurately; the numerous problems identified by the third-party monitoring and spot checks suggested the project's work in the field was not being effective in ensuring that interventions were delivered properly.

It seemed that the team was unlikely to become more focussed and effective without a major change in management style, and quite possibly a number of staff changes.

6 Field survey

This section presents a survey of 100 beneficiaries, non-beneficiaries and Lead Farmers carried out in six districts of Nangarhar province in November-December 2019. Its purpose was to find out what was really happening in the field, particularly:

- Did beneficiaries receive the intended goods and services? Were these adequate in quantity and quality?
- How did their farming practice and results compare with the assumptions of the *ex ante* model?
- Did the introduction of high-value crops change beneficiaries' practice and intentions with respect to growing opium poppies? If so, how and why?
- What were beneficiaries' overall impressions of the project?
- How do non-beneficiaries view the project?

6.1 Survey methodology

Data collection for the Mid-Term Evaluation of the CBARD-East project was conducted from November 24th 2019 to December 8th 2019. Initially, it was planned to cover ten villages from three districts (Rodat, Kot and Khogyani) but once data collection started it was realised that, due to security concerns, it was best to spend less time in each village. Hence different numbers of surveys were conducted in each village, ranging from just one in some villages to fourteen in Sadri Sheikh Ahmad village in Rodat district. Overall, a total of 27 villages were covered across six districts where the project is being implemented.

In **Rodat** and **Kot** districts, a total of 75 surveys were conducted in 21 villages; these consisted of 27 orchard beneficiaries, 22 commercial greenhouse beneficiaries, 6 Lead Farmers and 20 non-beneficiaries. On each day in the field, interviews were conducted in two nearby villages selected randomly from the list of villages where the project had conducted activities.

Because of the high security risk in **Khogyani**, it was not possible to visit villages in this district and so a random selection of beneficiaries from two villages were contacted by the national consultant to come to the CBARD office in Jalalabad city; this resulted in 18 beneficiaries, plus two Lead Farmers, attending for interview.

From **Achin**, **Chaparhar** and **Sherzad**, a total of only five beneficiaries were interviewed on the day when they were invited for a training session at the CBARD office in Jalalabad. Again, due to high security risks, it was not possible for the national consultant to visit these districts.

The final breakdown of interview was as follows:

District	Villages covered	Orchard beneficiaries	Greenhouse beneficiaries	Lead farmers	Non-beneficiaries	Total Interviews
Rodat	9	10	8	4	20	42
Kot	12	17	14	2	0	33
Khogyani	2	9	9	2	0	20
Sherzad	2	1	2	0	0	3
Achin	1	0	1	0	0	1
Chaparhar	1	0	1	0	0	1
Total	27	37	35	8	20	100

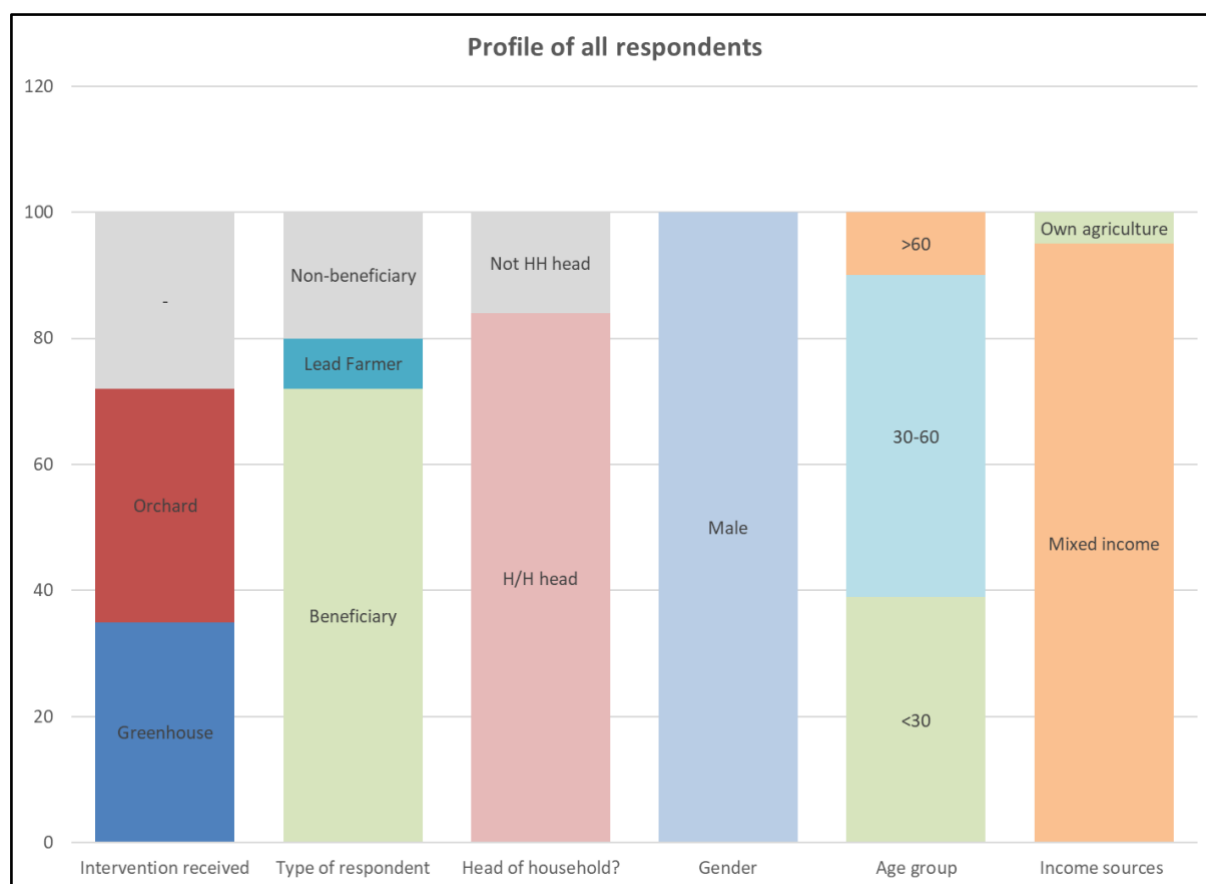
Selection of beneficiaries was random except for the five beneficiaries from Sherzad, Achin and Chaparhar district, who were interviewed while attending a training session at the project's office in Jalalabad city. This random selection resulted in a mix of some farmers who were quite happy with the project activities, some who were not very successful, and some who were completely dissatisfied with the project's performance.

Due to cultural norms, it was not possible to interview female beneficiaries individually, and it was considered that group interviews would not be a reliable way of obtaining honest individual opinions; hence it was agreed with UNDP to reallocate resources and enlarge the sample of male beneficiaries rather than trying to include female beneficiaries. This also resulted in a better understanding of the two main interventions – orchards and commercial greenhouses – which accounted for the large majority of project expenditure and were expected to have the greatest impact on opium production.

All interviews were conducted one-on-one without any interference from project staff, allowing beneficiaries to express themselves truthfully. All questions were asked in local language (Pashto) using common terms, so there was minimum chance for miscommunication between the interviewer and the interviewee; one bilingual consultant conducted all interviews and so gave a consistent translation and explanation of the survey questions.

6.2 Profile of respondents

The following chart shows the profile of all 100 respondents:



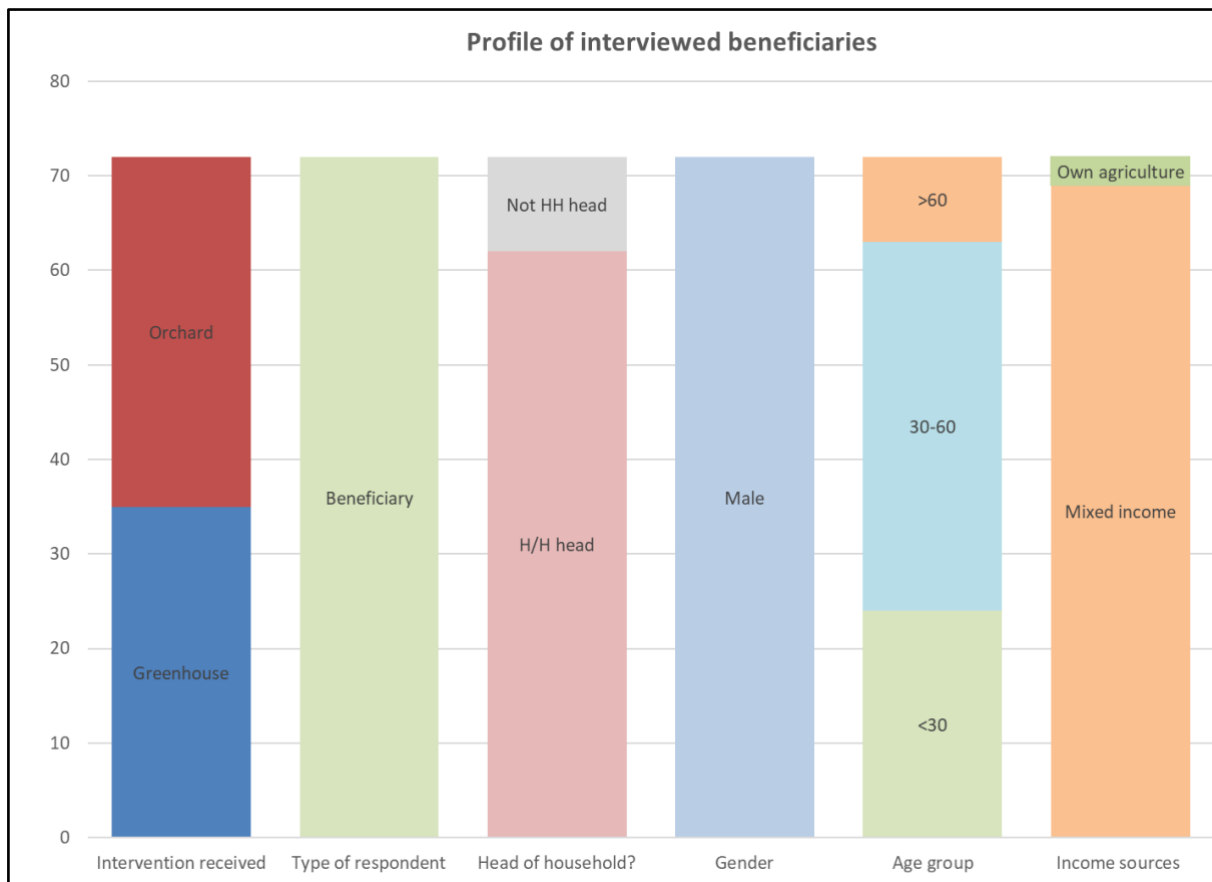
As noted above, 72 of the respondents were beneficiaries, split almost equally between those who received orchards and those who got commercial greenhouses; no members of this sample had received more than one intervention. There were also 8 Lead Farmers, who are paid by the project and so not eligible for interventions, and a comparison group of 20 non-beneficiaries chosen at random from farms close to the selected beneficiaries.

Most, but not all, respondents were household heads. All were male, due to the cultural barriers to conducting individual interviews with women.

Just over half of respondents fell into the middle age category, 30-60, but there was also a significant number of younger people.

When asked about income, only 5 % of households said that agriculture was their main income source, with the large majority having mixed income sources.

The following chart presents data for just the 72 beneficiaries in the sample:



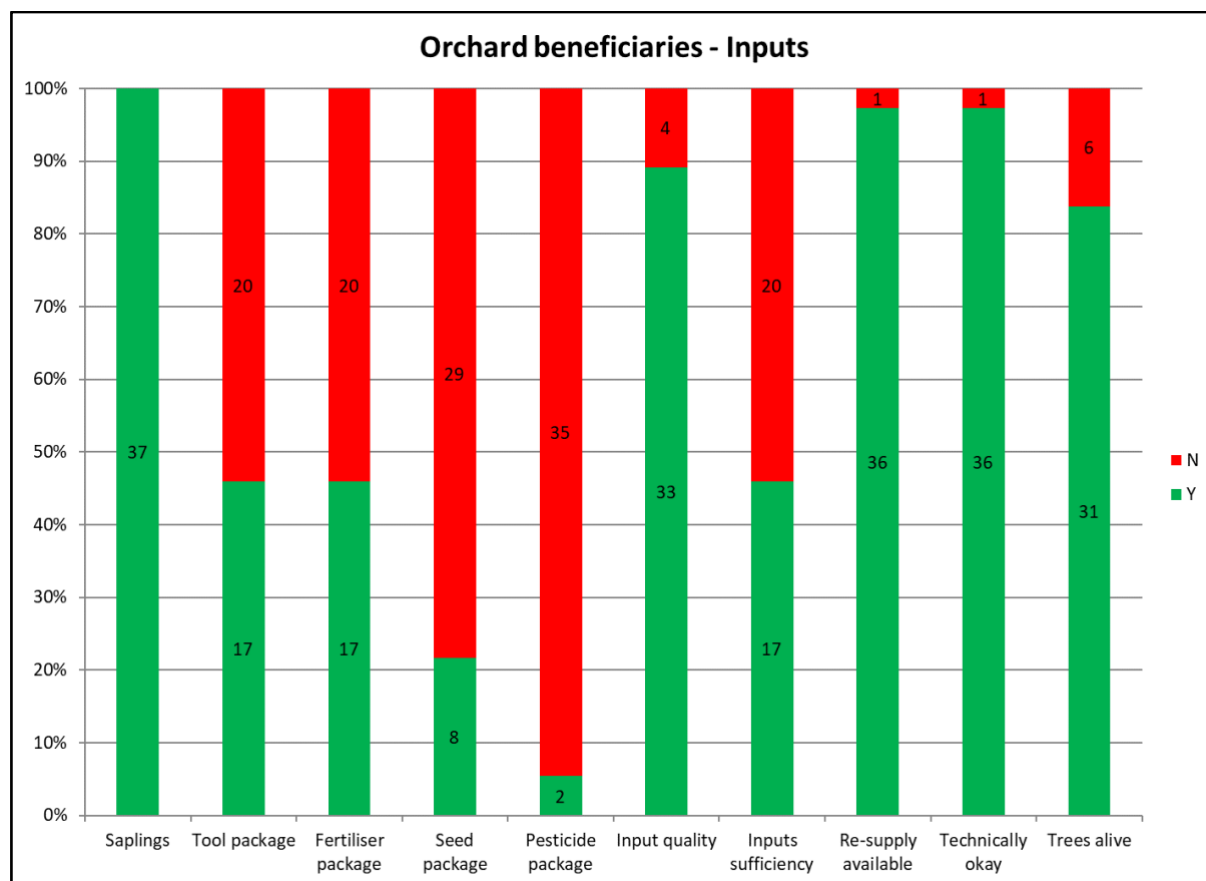
The profile of interviewed beneficiaries was almost identical to that of the sample as a whole.

6.3 Support received under the project

This section of the questionnaire looked at which kinds of support beneficiaries had received, to see whether the project was actually delivering the intended goods and services in every case.

6.3.1 Orchard beneficiaries

The following chart gives the responses of orchard beneficiaries:



Green bars denote positive responses, i.e. the beneficiaries had received the intended supplies or were free of the stated problem. Numbers are the absolute number of beneficiaries giving each response.

These beneficiaries were all supposed to receive saplings and a set of orchard tools, plus various consumable inputs for the first year of production, consisting of fertilisers and pesticides for the orchard, and a package of inter-crop seeds²⁸.

All orchard beneficiaries had received saplings (the criterion to count as an orchard beneficiary) but fewer than half said that they had received the tool package or the fertiliser package, whilst only 22 % received the intercrop seeds package and just 5 % the pesticide package.

In terms of input quality and quantity, almost 90 % said the quality was okay but slightly fewer than half considered the quantity to be sufficient. The project aimed to provide inputs for the first year only, with the expectation that farmers would then be able to afford to buy the necessary inputs for subsequent intercrops and orchard maintenance. When it came to

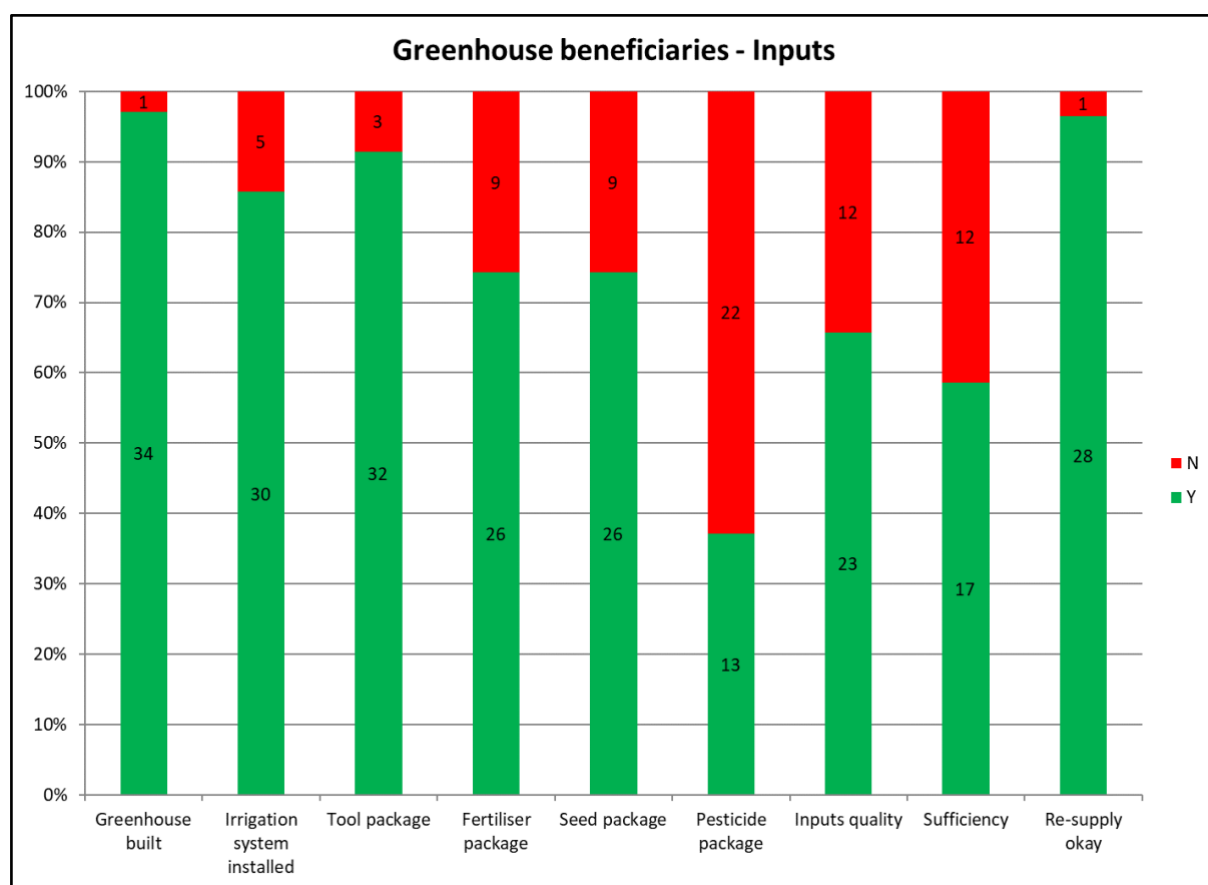
²⁸ Details of the various packages are given in Annex 2.

buying new inputs for the next season, only one farmer reported difficult in finding the necessary inputs, so access to inputs is clearly a matter of money rather than any limitations in the supply chain.

Just one farmer reported encountering technical problems in growing orchard crops, and 84 % said that the majority (at least 80 %) of their trees were still alive at the time of interview. Of the six farmers who reported significant losses, two attributed this to water scarcity, two to diseases, one to low quality of the saplings received, and one admitted it was due to his own carelessness.

6.3.2 Greenhouse beneficiaries

The following chart gives the responses of beneficiaries who received commercial greenhouses:



These beneficiaries were all supposed to receive a fully-constructed greenhouse with an installed irrigation system, plus a set of greenhouse tools and sufficient fertilisers, seeds and pesticides for the first production season²⁹.

One beneficiary said that his greenhouse had not been fully built, having received only the frame but not the plastic covering, and five reported that the irrigation system had not been installed. Most also complained about how long it took to construct the greenhouses, with several mentioning six months and some saying it took as long as 7-8 months to complete the greenhouse.

²⁹ Details of the various packages are given in Annex 2.

In terms of inputs received, the situation was generally more positive than for orchards, with 91 % receiving the intended tool package and 74 % the fertiliser package and the seeds package. Pesticides were a different matter, with just 37 % receiving the intended inputs.

Satisfaction with the quality of the inputs was markedly lower than amongst the orchard beneficiaries, with one third of beneficiaries saying that the inputs – typically the greenhouse itself – were not of adequate quality³⁰.

Just under 60 % considered the quantity of other inputs to be sufficient for their needs, with other saying that the supply of seeds and fertilisers was not sufficient for the second crop, and that they did not have the funds to buy these inputs themselves since the yield of the first crop was not very high as they were still learning how to manage their greenhouse. Other than the obstacle of money, farmers generally did not face problems in finding inputs for the following year, with just one reporting difficulties.

6.3.3 Comment on inputs received

The third-party field monitoring checks³¹ reported quite widespread problems of poor input quality and under-delivery. The responses to this mid-term evaluation survey, which was completely independent of the third-party monitoring, confirm this finding and also show a difference between the two kinds of inputs: orchard beneficiaries all received the key input of saplings and expressed fewer concerns about quality than some other reports suggest, but reported systematic under-supply of all kinds of consumable inputs, with less than half of the intended packages actually being delivered. Greenhouse beneficiaries had more problems with the delivery or quality of the key inputs, i.e. the greenhouse and irrigation system, whilst the under-supply of consumable inputs was still serious but not as extreme as for orchards.

6.4 Results with high-value crops

This section of the survey looked at what beneficiaries had actually grown in their orchards and greenhouses, what labour they had used, what results they had obtained, and what others in the community thought of these high-value crops.

6.4.1 Orchard beneficiaries

Of the 37 orchard beneficiaries interviewed, one received the trees in spring 2018 (March), one in autumn 2018 (October), six in spring 2019 (January-June) and the remaining 29 in autumn 2019 (September-November), meaning that most of the respondents had only a few months' experience with the orchard before the interviews took place in late November or early December of 2019.

Intercrops

The Gross Margin models for orchards assume that farmers will plant intercrops between the trees in the early years, thus generating some income from the land until the orchard matures and starts to bear fruit.

³⁰ Survey respondents did not generally say in what way the quality was inadequate, other than those who noted that they had not received an irrigation system, but the third-party monitoring found examples of greenhouses without plastic, poor quality concrete foundations, and corrosion of metal frames.

³¹ Conducted by a company under contract to perform third-party field monitoring and spot checks.

Only eight interviewees had established their orchards early enough to have the chance of growing any spring intercrops, and of these, only two had done so: one growing cotton and one tomatoes, both for sale on the local market.

By autumn 2019 all 37 interviewees had established their orchards and 22 of them (almost 60 %) reported some kind of autumn intercrop:

- 12 planted wheat, which was still in the ground at the time of interview;
- 3 grew late potatoes, which in some cases must have been planted before the trees went in;
- 7 grew onions, garlic or mixed vegetables, and of these, three reported a harvest and sale on the local market.

The other 19 orchard beneficiaries were then given the opportunity to say why they had not grown intercrops, and gave the following responses:

- 13 said that they had only recently received the trees (though some of these also reported an autumn crop of wheat);
- 6 mentioned lack of orchard management skills;
- 2 said that they did not have sufficient time to raise an intercrop.

It is still too early to draw reliable conclusions about intercrops in orchards, so the project should continue to monitor this to find out what farmers do and why. If it turns out that a significant share of orchard growers regularly choose not to plant intercrops, it will be important to find out why, since in theory they make a significant contribution to overall financial returns. The Gross Margin budgets may also need to be adjusted to reflect the typical situation with and without intercrops.

Orchard crops

None of the orchard trees are yet old enough to bear significant fruit, so no information can yet be collected on yields, marketing or revenue.

Orchard labour

When asked an open question about labour in their orchards, of the 37 respondents:

- 33 said that they used family labour;
- 4 said that they did all the work themselves;
- none reported hired labour, migrant labour or any other response.

This is relevant in that it indicates that planting orchards only creates, in the early years, direct employment for the immediate family of the beneficiary and not for landless families or others in the community. However, this could change in future when more labour is needed for harvesting and sorting the crop.

When asked whether their new orchards had affected labour availability for their other crops:

- 21 said it had;
- 16 said it had not.

This is relevant to the issue of labour diversion, i.e. that establishing orchards might reduce the supply of available labour to grow and harvest opium.

Community interest

With only one exception, every respondent said that others in their community had expressed interest in the orchards and might consider copying them, though nobody actually reported a neighbour establishing an orchard without project support.

Other comments

In response to a final question of “Any other comments?”:

- 3 farmers complained that the tool package was not complete (as noted above);
- 2 farmers expressed a need for greater technical expertise (presumably via training and extension support).

6.4.2 Greenhouse beneficiaries

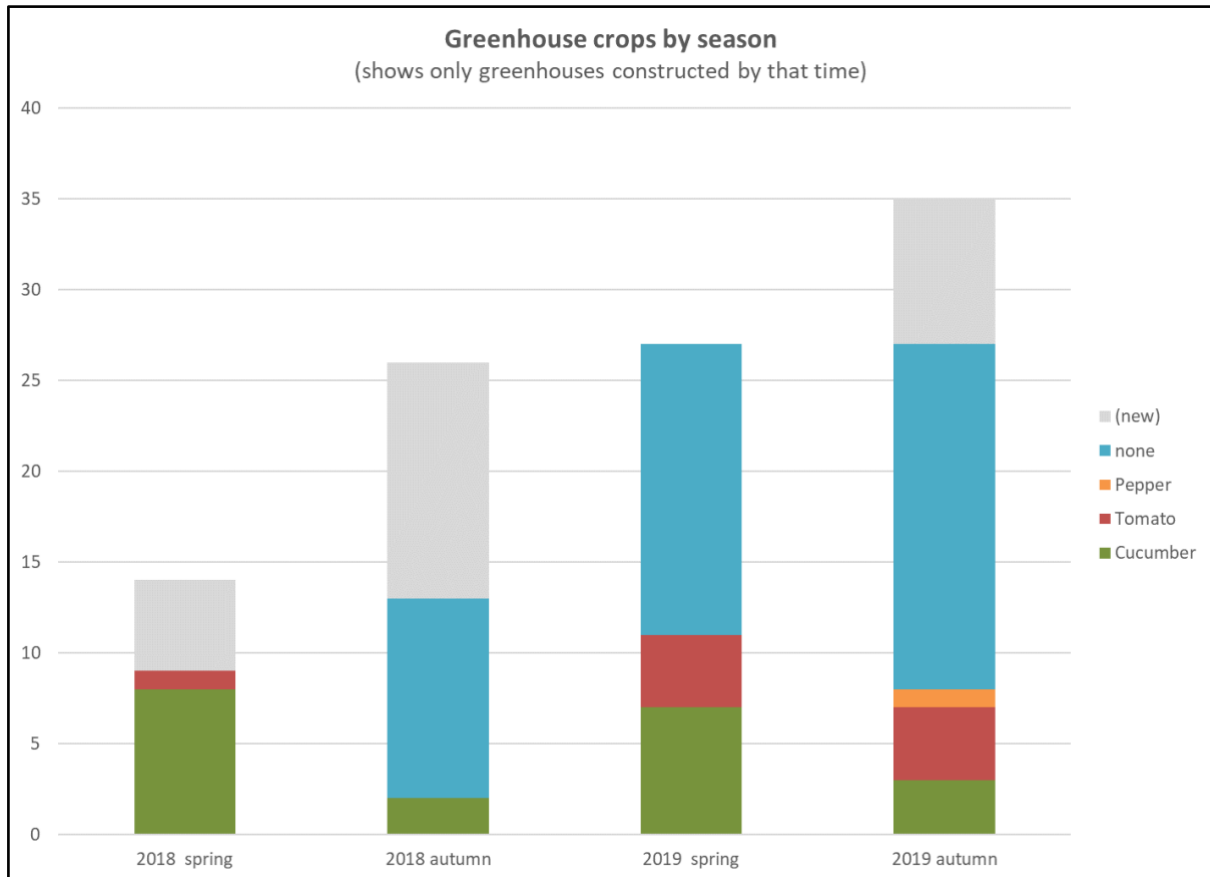
Of the 35 greenhouse beneficiaries interviewed:

- 11 received their greenhouse in spring 2018 (January-June), which allowed six of them to plant a spring crop that year;
- 15 got the greenhouse in autumn 2019 (September-December), with two of them able to get an autumn crop that year;
- 9 received the greenhouse in autumn 2019 (August-October) and only one of these managed to plant a crop before the survey at the end of that year.

Three beneficiaries reported greenhouse crops in spring 2018 – before the date when they said they got the greenhouse; such anomalies are relatively common in surveys that rely on the memory of farmers who do not keep written records.

Greenhouse crops grown

The following chart shows the number of respondents growing each kind of greenhouse crop, by season:



The chart shows only greenhouses that were completed in or during that season; grey denotes that the greenhouse had only just been established and so no crop was grown in that season.

For greenhouses that were apparently completed by that time, dark green shows cucumbers, red shows tomatoes and yellow shows peppers, whilst blue represents greenhouses that were left unplanted that season. Three conclusions emerge:

- The most popular crop was cucumbers, followed by tomatoes; peppers were planted on only one occasion;
- Greenhouses often seem to be left empty even once they are complete, with crops apparently grown on only 39 % of occasions when they could have been;
- A higher share of completed greenhouses was planted in spring (56 %) than in autumn (25 %).

Looking in more detail at whether greenhouses were used or left empty:

- 11 greenhouses were established in **spring 2018**, giving the potential to grow 3 or 4 crops by the time of the survey, depending on when exactly construction was complete. All of these had grown at least one crop and four had grown two crops, but none had managed a third or fourth crop, with the average being 1.4 crops per greenhouse;

- 15 greenhouses were established in **autumn 2018**, giving the potential to grow 2 or 3 crops by the time of the survey. Six of these had grown no crop at all, none had grown three crops, and the average was 1.3 crops per greenhouse;
- 9 greenhouses were established in **autumn 2019**, and so many of these farmers would not have had the time to plant a crop that season, though three farmers did manage to get a crop in.

Farmers were asked whether they managed to get two crops per year; of the 30 who answered this question, just under half (14) said that they did. The others were asked why they did not get a second crop, and their responses can be divided between those who had not planted any crop at all, and those who had grown at least one crop but did not manage a second crop.

Of the six farmers who had grown no crop at all, 2 said that the greenhouse was not up to standard, 1 said he couldn't afford the seeds (he had not received the seed package), 1 mentioned his limited technical capacity, 1 said he faced crop disease problems, and 1 said it was due to family problems.

Of the farmers who had grown at least one crop but did not manage a second crop, 3 said it was due to unsuitable weather, 2 mentioned the poor quality of the greenhouse, 2 said they could not afford the seeds, and 1 referred to his limited technical capacity.

The gross margin models for greenhouses in Nangarhar assume that farmers will get two crops each year, but so far they have average around 0.8 crops per year. The project may want to take action to increase the level of utilisation of the greenhouses, as well as to adjust its gross margin models to better reflect reality.

Crop yields and revenues

A total of 17 crops of cucumbers had been grown and marketed by the time of the survey, with all produce sold on local markets:

- The yields from most crops of cucumbers were in the range of 1-3,000 kg from the 300 m² greenhouse, with an average of 1,850 kg. Two farmers achieved very low yields (420 kg and 700 kg), suggesting disease or technical problems;
- Prices were mainly in the range of 10-15 Afs/kg, though the average was 11 Afs/kg due to two farmers who achieved just 5 Afs/kg and two who got 7 Afs/kg;
- Revenue from the greenhouse was usually in the range of 10-30,000 Afs (\$ 130-390) per crop; this is substantially lower than the estimate of around \$ 750 net income (i.e. revenue minus variable costs) from the original project gross margin budgets.

Five farmers had grown crops of tomatoes, one in the spring of 2018 and four in spring 2019, but none reported yield or sales.

Greenhouse labour

When asked an open question about labour in their greenhouses, of the 35 respondents:

- 30 said that they used family labour;
- 5 said that they did all the work themselves;
- none reported hired labour, migrant labour or any other response.

As with orchards, this is relevant in that it indicates that greenhouses only direct employment for the immediate family of the beneficiary and not for landless families or others in the community. Unlike orchards, greenhouses can operate at full capacity from the year they are built, so there is little reason to assume that additional employment will develop in future.

When asked whether their greenhouses had affected labour availability for their other crops:

- 11 said it had;
- 24 said it had not.

This suggests that greenhouses are somewhat less effective than orchards at diverting labour in a way that might reduce farmers' ability to grow and harvest opium.

Community interest

With only one exception, every respondent said that others in their community had expressed interest in their greenhouse and might consider copying them, though nobody actually reported a neighbour building a greenhouse without project support. This result is identical to that for orchards.

Other comments

In response to a final question of "Any other comments?":

- 6 farmers complained that the greenhouse was not up to standard;
- 5 farmers complained about the time it took to build the greenhouse, referring to the "administrative work" progressing slowly.

6.5 Impact on opium poppy intentions

All respondents were asked how likely they were to grow opium poppies in future, and the reasons for this decision. Beneficiaries were asked specifically about the impact of the interventions they received, as well as about other factors that might influence their decisions. The questions asked of Lead Farmers and other non-beneficiaries were modified as necessary but kept as close as possible to those put to the beneficiaries.

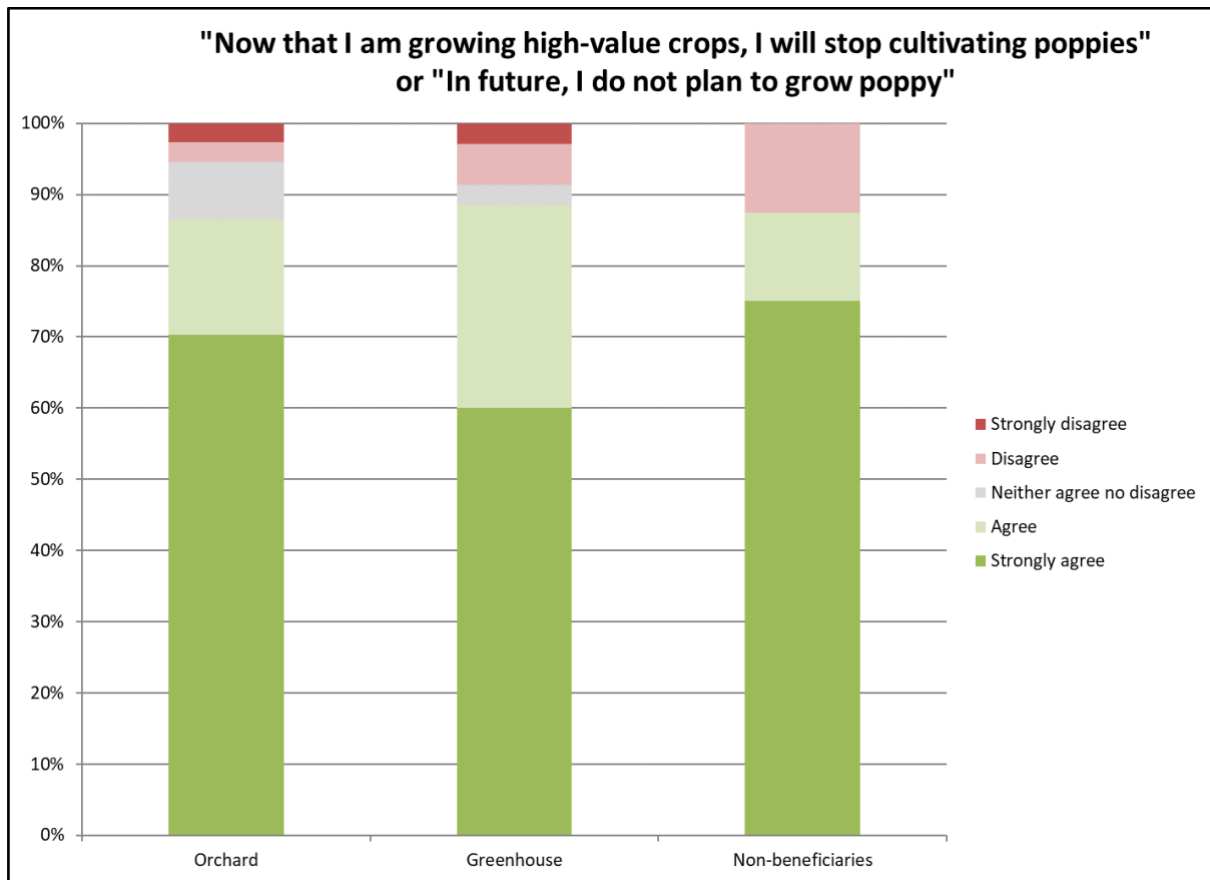
To avoid simple Yes/No answers, respondents were read a series of statements and asked how strongly they agreed with them; the possible answers and the numerical scores attributed to them were:

- Strongly disagree (0 % agreement)
- Disagree (25 % agreement)
- Neither agree nor disagree (50 % agreement)
- Agree (75 % agreement)
- Strongly agree (100 % agreement)
- Not applicable (excluded from numerical analysis)

In the charts, agreement is shown in green and disagreement in red, with stronger colours indicating stronger agreement or disagreement. Grey denotes neither agreeing nor disagreeing.

6.5.1 Poppy-growing intentions

Beneficiaries were asked to respond to the statement “Now that I am growing high-value crops, I will stop cultivating poppies”, whilst non-beneficiaries were read the simple statement “In future, I do not plan to grow poppy”. Their responses were as follows:



Almost 90 % of beneficiaries agreed that they would not grow poppy in future, with orchard beneficiaries being somewhat more likely to agree strongly. However, non-beneficiaries were just as likely as beneficiaries to agree and slightly more likely to agree strongly, suggesting either that respondents were simply be saying what they thought the project wanted to hear, or that the project influenced poppy cultivation through its very presence, rather than through the direct impact of high-value crops.

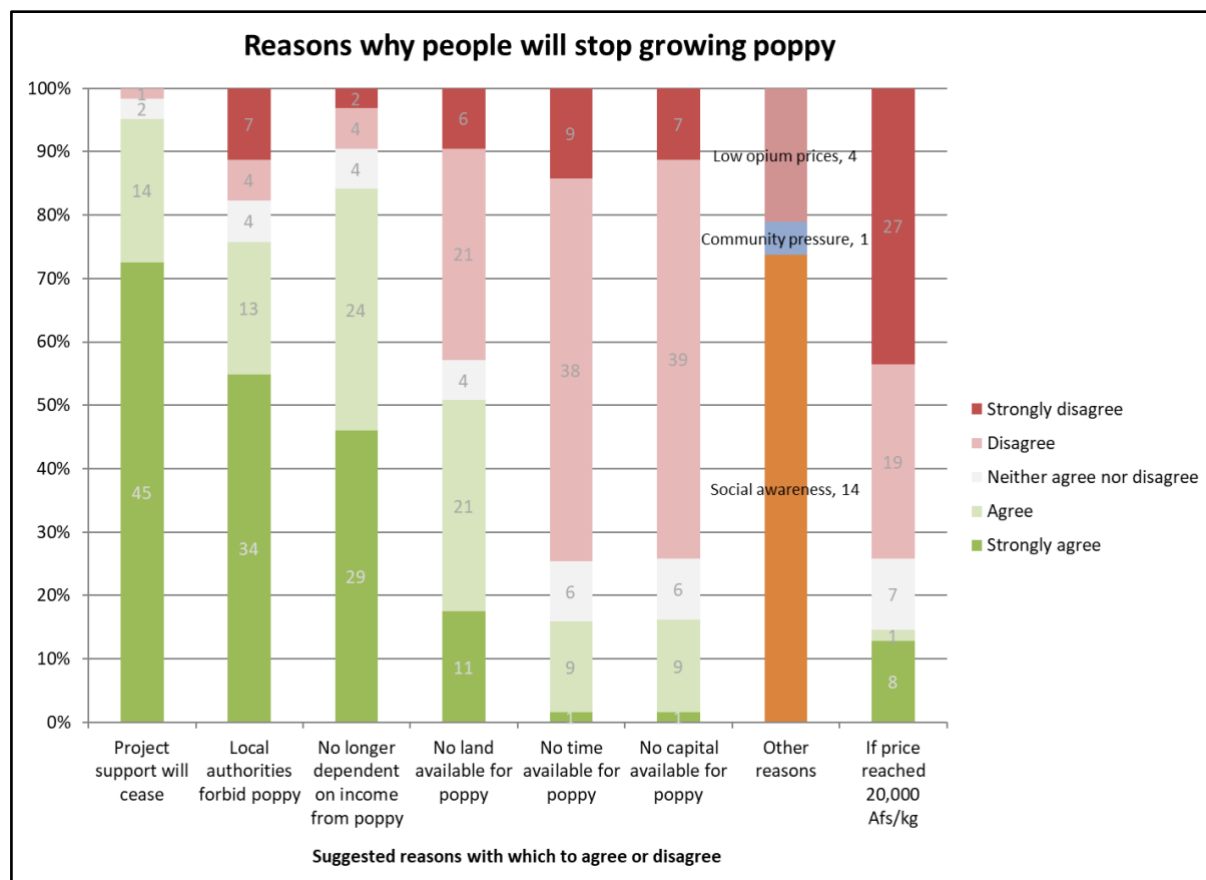
6.5.2 Reasons given by beneficiaries

One set of possible reasons was given to those beneficiaries who said they would stop growing poppy, and another set to those who said they would continue.

Reasons why beneficiaries will stop growing poppy

All those who indicated that they would stop growing poppy were then asked to respond to a series of statements about why they would stop, giving the option to list multiple reasons and assign them different levels of importance.

Their responses are shown below, ranked in order from the highest to the lowest number of respondents agreeing strongly with the statement. The final statement with which to agree or disagree was slightly different in approach: “If the opium price increased to 20,000 Afs/kg, I would start to grow poppy again”.



The responses indicate quite a high degree of coercion or conditionality, with the most strongly accepted statement being that farmers would not grow poppy in future because this would exclude them from further project support, and the second strongest being that local authority figures tell them not to grow poppy (these two statements were read out after those on income, land, labour and capital).

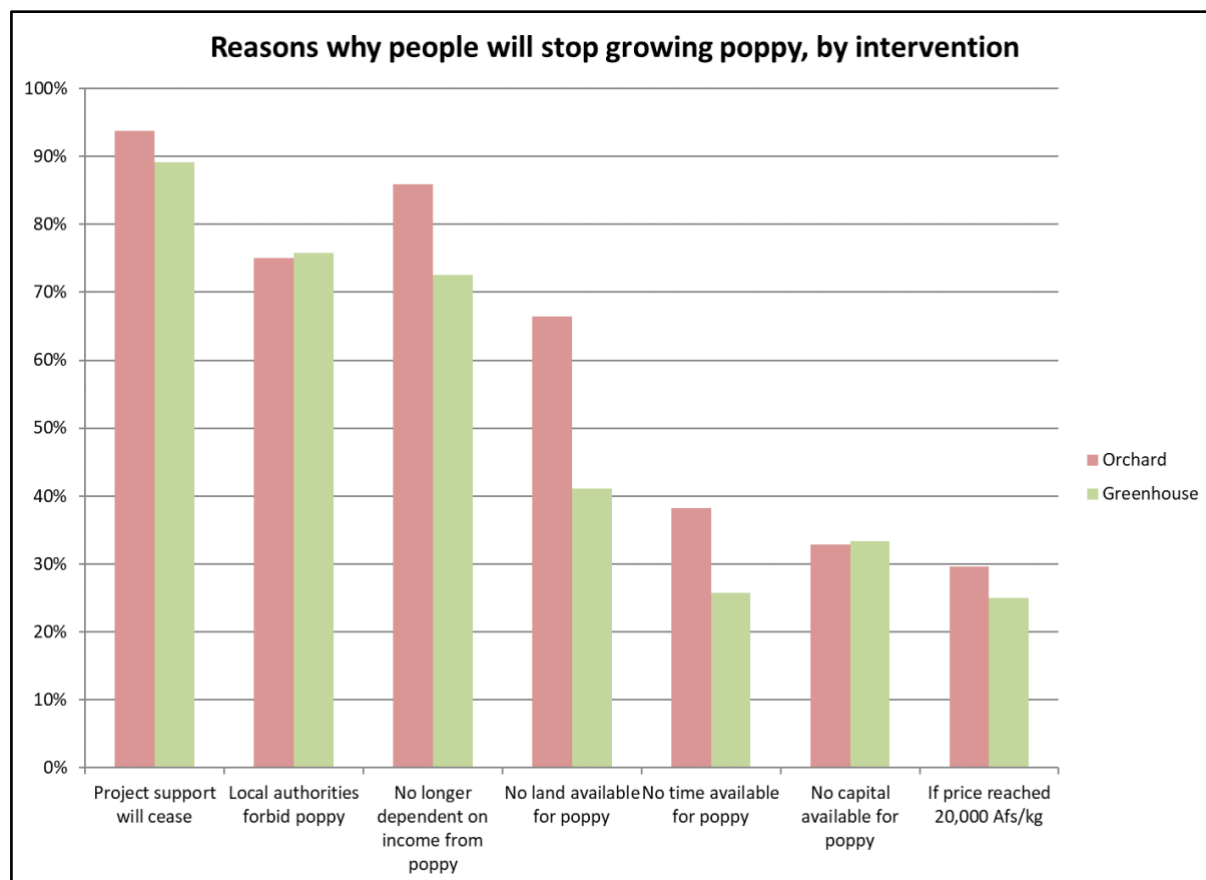
In third place came a statement with which 85 % of beneficiaries agreed, though not always strongly, that they were no longer dependent on the income from poppy.

Three statements investigated the idea of “resource diversion”; just over half of respondents agreed to some extent with the statement that they would no longer have sufficient land to grow poppy, but shortage of time or capital were not seen as major issues.

Nineteen farmers gave various other reasons for not growing poppy; the most common was “social awareness”, with four farmers referring to the current low price of opium. Just one mentioned “community pressure”, which other respondents may have reported as local authorities telling them not to grow poppy.

Most farmers in this group said that they still would not return to opium production if the price rose to 20,000 Afs/kg (around \$ 250/kg and so two to three times the current price).

The following chart examines how the responses differed between beneficiaries of orchards and greenhouses; the bars show the average level of agreement with each statement using the scoring system described in section 6.5 above, where 100 % would indicate that everybody strongly agreed and 0 % would mean that all respondents strongly disagreed:



The overall patterns are similar for the two groups of beneficiaries, but with orchard recipients being much more likely to mention the lack of land for poppy, and somewhat more likely to mention the lack of time and their reduced income dependence on poppy. This is in line with the fact that orchards occupy more land than greenhouses, and that the share of beneficiaries saying that the labour demands of their new high-value crop was higher amongst orchard recipients than amongst those who received greenhouses.

At the time of the survey, the project interventions may be expected to have affected beneficiaries' income in different ways:

- **Greenhouse recipients** should have started producing high-value crops immediately and so seen their incomes rise;
- **Orchard recipients who planted intercrops** will have gained an income from the intercrop but lost the income of the crop they would otherwise have grown on the orchard land – their overall income may have gone slightly up or down;
- **Orchard recipients who did not plant intercrops** will have seen their overall income fall, since they have lost the income from the crop they would otherwise have grown and not yet gained any fruit income to replace it.

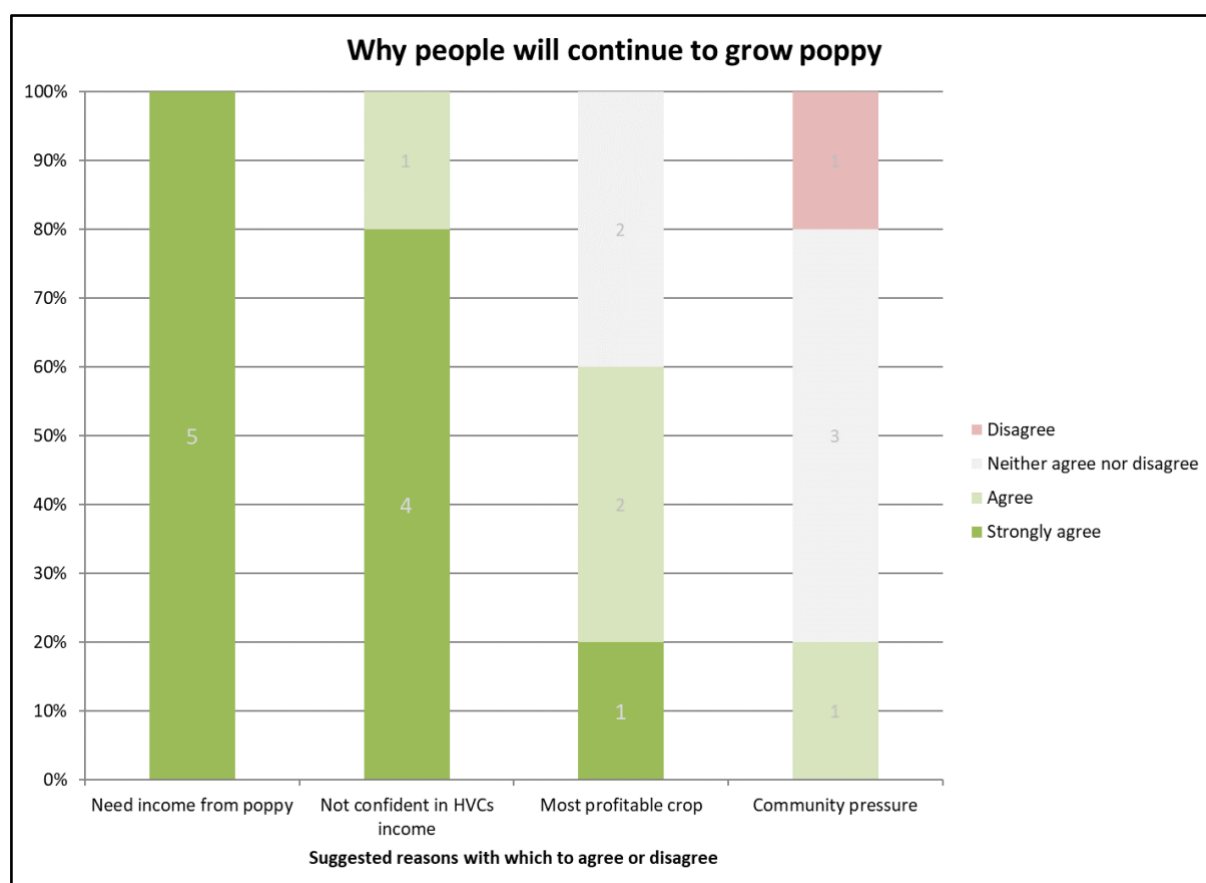
Logically, this should have influenced their response to the statement “In future I will not grow poppy because I am no longer dependent on income from poppy”, but in reality the responses did not follow this logic:

- **Greenhouse recipient:** 77 % agreed or strongly agreed that they were no longer dependent on poppy income;
- **Orchard recipients who planted intercrops:** 79 % agreed or strongly agreed;
- **Orchard recipients who did not plant intercrops:** 100 % agreed or strongly agreed.

This suggests that orchard recipients either had great confidence that they would generate a good income from their orchards in future – or were giving the answer that they thought the interviewer wanted to hear.

Reasons why beneficiaries will continue growing poppy

Five beneficiaries (three with orchards and two with greenhouses) said that they would continue cultivating poppy even though they were now growing high-value crops; their stated reasons were as follows:



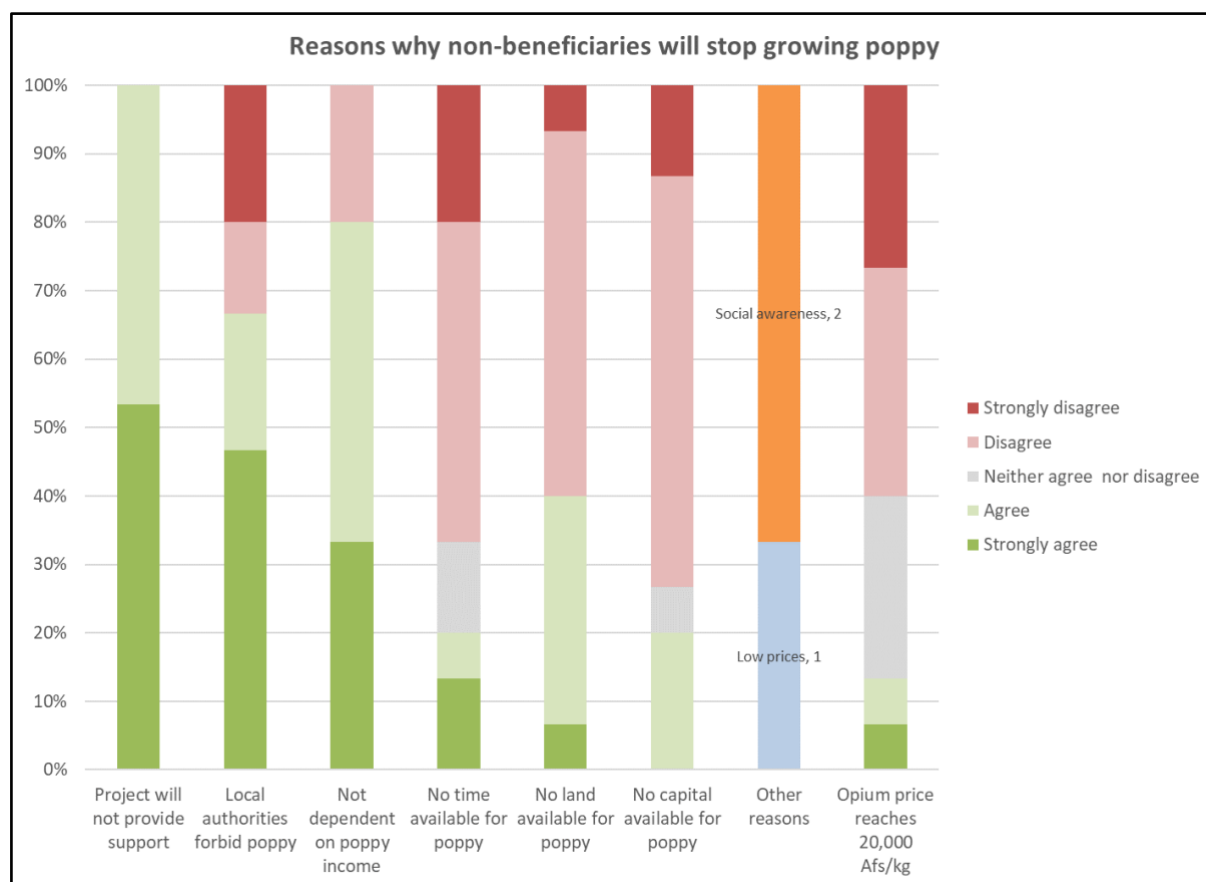
Only one person said that they had come under pressure to keep growing poppy, and the most common reasons were all to do with income – that they needed the income from poppy, were not confident in the income they would get from high-value crops, or that poppy was the most profitable crop for them.

6.5.3 Non-beneficiaries

The sets of suggested reasons for stopping or continuing poppy production were kept the same for non-beneficiaries as for beneficiaries.

Reasons why non-beneficiaries will stop growing poppy

The reasons given by non-beneficiaries who said they do not plan to grow poppy in future are as follows, ranked in decreasing order of strong agreement:

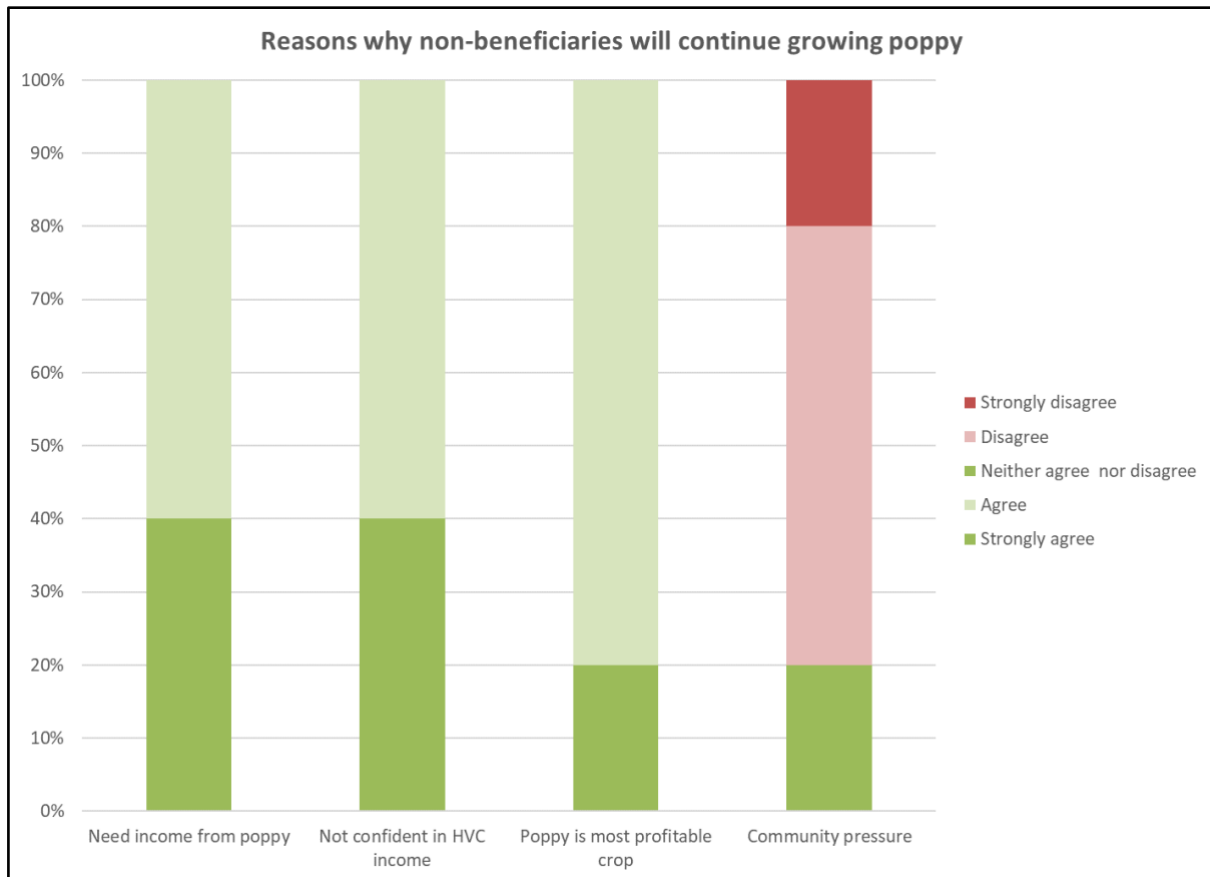


The reasons given are almost identical to those of beneficiaries who said they would stop growing poppy, with conditionality and coercion again being the most important reasons. This suggests that people who have not yet received project support believe that they are likely to do so in future and that they must refrain from growing poppy in order to be eligible. Interestingly, the next most common reason was that these farmers were not dependent on poppy income. As they had not received any interventions from the project, their non-poppy income must come from sources other than orchards or greenhouses – quite possibly from non-agricultural employment, business or remittances, in line with the earlier finding that few respondents said that agriculture was their main source of income.

Only three of these 28 respondents gave other reasons for not growing poppy, and these again closely mirrored the reasons given by beneficiaries: social awareness, and the low price of poppy. However, the majority also said that they would not go back to growing poppy even if the price rose to 20,000 Afs/kg (\$ 250/kg).

Reasons why non-beneficiaries will continue growing poppy

Only five of the 28 non-beneficiaries interviewed said that they would continue to grow poppy; their reasons are shown in the following chart, but it should be noted that it reflects a very small sample:



Again, the reasons are very similar to those given by beneficiaries who said they would continue to grow poppy – it is mainly about income³². This confirms the importance of monitoring gross margins from high-value crops and other project interventions.

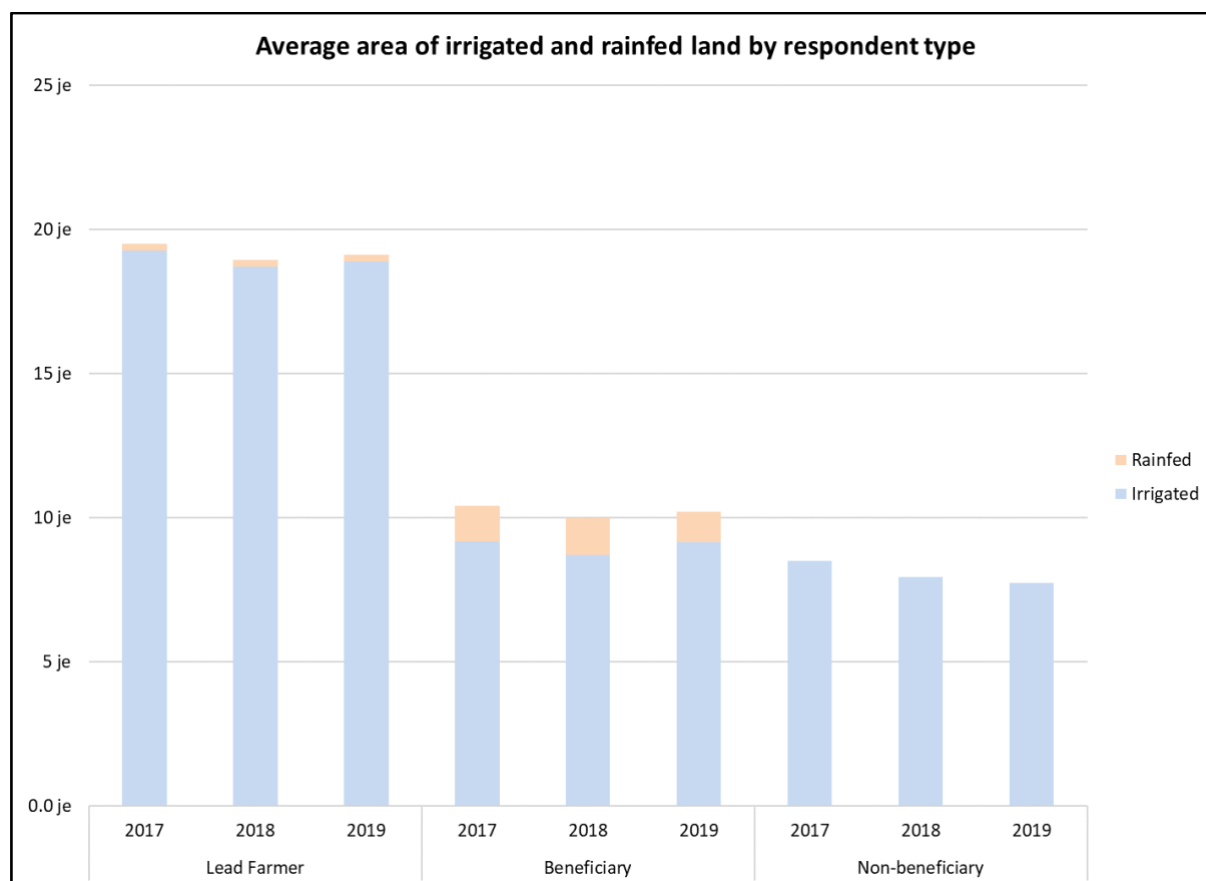
Four out of the five said that they disagreed or disagreed strongly with the statement that they felt under pressure to grow poppy, a higher level of feeling than that expressed by beneficiaries.

³² The question about reliability of income from high-value crops was repeated for consistency but may not have great meaning for non-beneficiaries.

6.6 Crop areas

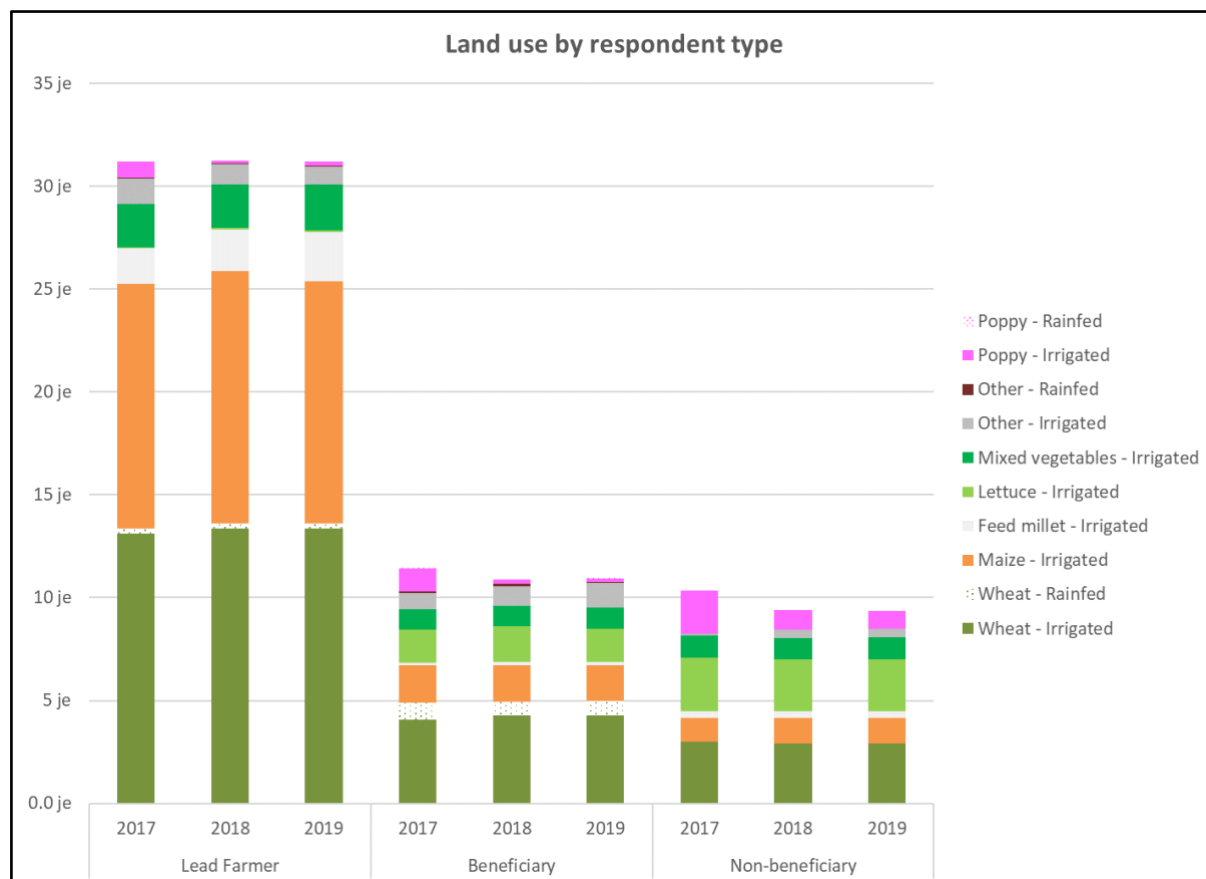
All respondents were asked about their cropping on rainfed and irrigated land in 2017, 2018 and 2019. One complication is that farmers would often grow a second crop, most commonly maize after winter wheat. This was not always explicit in the questionnaire responses but in most cases could be deduced by comparing the quoted total areas with the sum of the individual crop areas.

The following chart shows the average total areas of irrigated and rainfed land for each type of respondent, ignoring any second crop, and shows clearly that the large majority of cultivated land in this area relies on irrigation:



Lead Farmers were clearly larger than most of their neighbours, with an average of 19 jeribs (3.8 ha) of land, of which almost all was irrigated and just 0.3 jeribs rainfed. This made them almost twice the size of the average beneficiary, who had 10 jeribs (2.0 ha) including an average of 1.2 jeribs of rainfed land. Non-beneficiaries were slightly smaller with 8 jeribs (1.6 ha) and none of them had any rainfed land.

The following chart shows the average land use land for each type of respondent, including second crops:



Comparing this with the previous graph shows that second crop can play a significant role for the more intensive farmers:

- Lead Farmers grew an average of 31 jeribs of crops on their 19 jeribs of land, averaging 1.6 crops per year;
- Beneficiaries grew an average of 11.1 jeribs of crops on their 10.2 jeribs of land, averaging 1.1 crops per year;
- Non-beneficiaries grew an average of 8.3 jeribs of crops on their 8.1 jeribs of land, averaging just over 1 crop per year.

This indicates that the project succeeded in its objective of identifying Lead Farmers who were significantly better than most of their neighbours.

Looking at land use in 2017 before the project began:

- Most of the Lead Farmers' extra land and second cropping was used to grow cereals, and beneficiaries also grew more wheat than non-beneficiaries.
- In terms of high-value crops (lettuce and mixed vegetables), Lead Farmers and beneficiaries had similar areas, at 2.2 and 2.0 jeribs respectively, but non-beneficiaries grew significantly more, with an average of 3.7 jeribs.
- Poppy was found amongst all types of respondents, with the largest areas on non-beneficiary holdings (2.1 jeribs), compared to 1.2 jeribs for beneficiaries and 0.8 jeribs for Lead Farmers. It seems that non-beneficiaries may have compensated for their

smaller overall land area by growing a higher share of ‘high-value’ crops – including poppy.

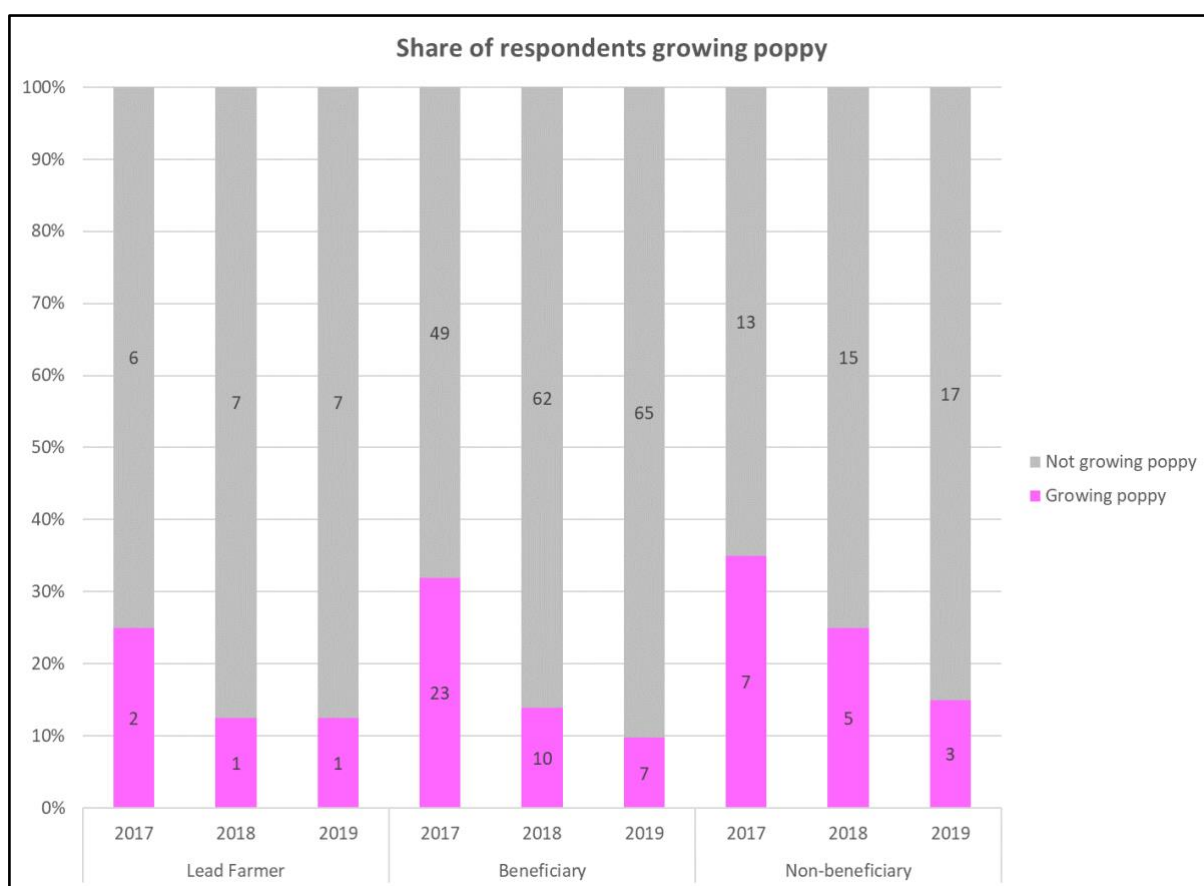
There has been a significant reduction in poppy area on all holding types; comparing 2019 with 2017:

- Lead Farmers reduced their average poppy area by 0.6 jeribs (75%);
- Beneficiaries reduced their poppy area by 1.0 jeribs (almost 90 %);
- Non-Beneficiaries reduced their poppy area by 1.2 jeribs (almost 60 %).

Thus, the greatest *absolute* fall occurred on non-beneficiary holdings, whilst the greatest *relative* fall was on beneficiary holdings.

Proportion of farmers growing poppy

The following graph shows the proportion of respondents of each type growing poppy in each year:

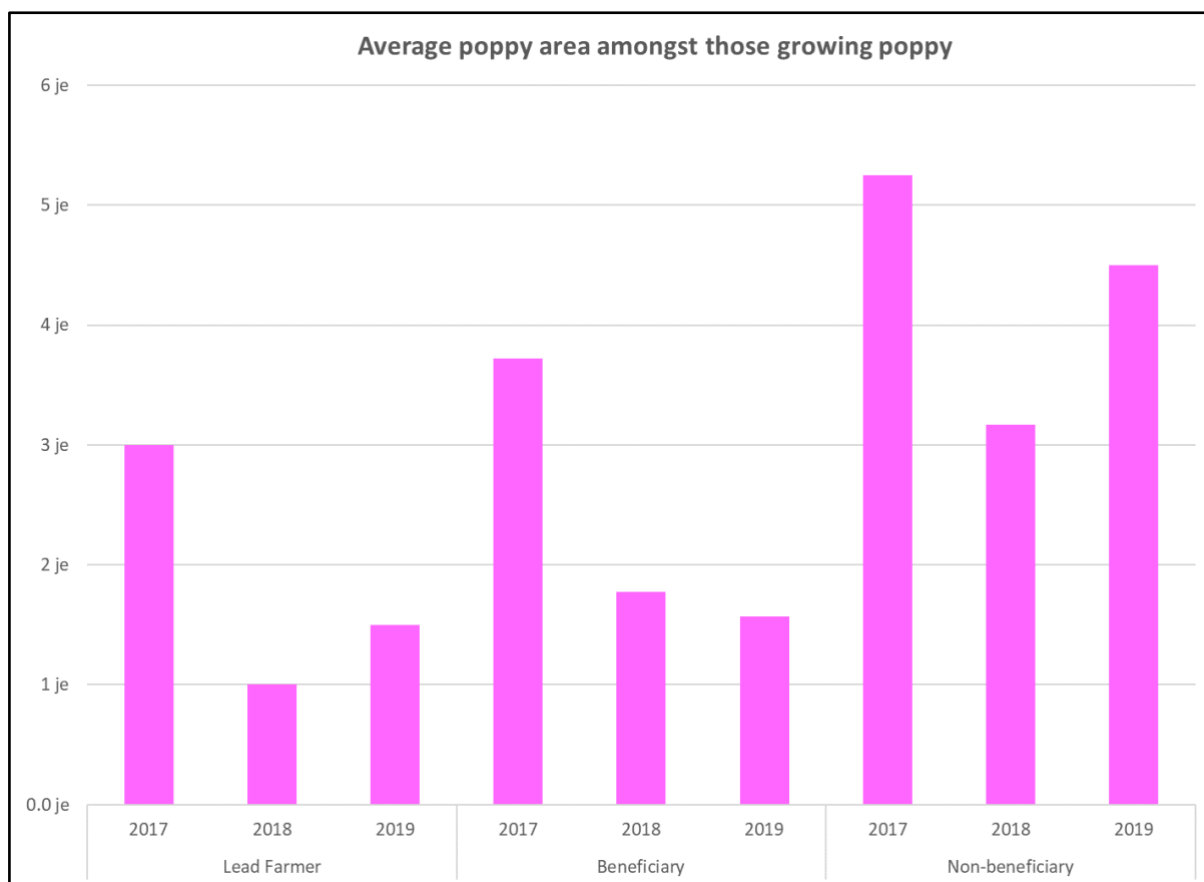


Overall, a third of respondents grew opium poppies in 2017, which reduced to 12 % by 2019. The reduction amongst Lead Farmers took place early in the project, in 2018. Most of the drop amongst beneficiaries also occurred that year, with some further fall in 2019. Non-beneficiaries dropped out of poppy production progressively over 2017-2019.

However, these results should be treated with caution due to the small number of poppy growers in the sample: as the numbers in the columns show, there were just 2 Lead Farmers

growing poppy in 2017 and only 8 non-beneficiaries. However, the beneficiary sample contains a more representative 23 poppy growers.

The following graph shows the average area of land growing poppy, for those farmers who grew it in that year:



This shows that the reduction in total poppy area came about through a combination of fewer farmers growing poppy and a reduction in area amongst those who continued to grow it.

It is clear that the big reduction in average poppy areas took place from 2017 to 2018, before any orchards or greenhouses were established by the project. The graph also suggests that the average poppy area has started to increase again, but this conclusion is not very reliable: the columns for Lead Farmers only reflect one individual by this point, so nothing can be read into this result; the number of non-beneficiaries growing poppy was six in 2018 and four in 2019, and the increase in average poppy area reflects the fact that the two growers who moved out of poppy after 2018 had slightly smaller areas than those who continued with poppy. However, the sample is too small to draw firm conclusions on how the size of poppy plots had changed since 2018.

6.6.1 Drivers of change in poppy area

What caused some farmers to stop growing poppy and others to reduce their area? Was it the project interventions, external causes, or a combination of both?

The two main hypothetical mechanisms through which high-value crops might reduce poppy area are (a) reduced income dependency, as farmers no longer depend on the income from poppy once they have an increased income from high-value crops, and (b) resource diversion,

as the re-allocation of land, labour and capital to high-value crops reduces farmers' ability to grow poppy. Neither of these effects would apply to beneficiaries before they receive the intervention, but once someone receives a greenhouse the effects should begin almost immediately, as the greenhouse can be fully utilised from the first season. With orchards the phasing is a bit more complex: orchards start using resources immediately but the main income – and a lot of the work – only arises once the trees mature and start to bear fruit; however, if orchard recipients grow intercrops (which almost half of respondents do) then there will be both work and income from the first year.

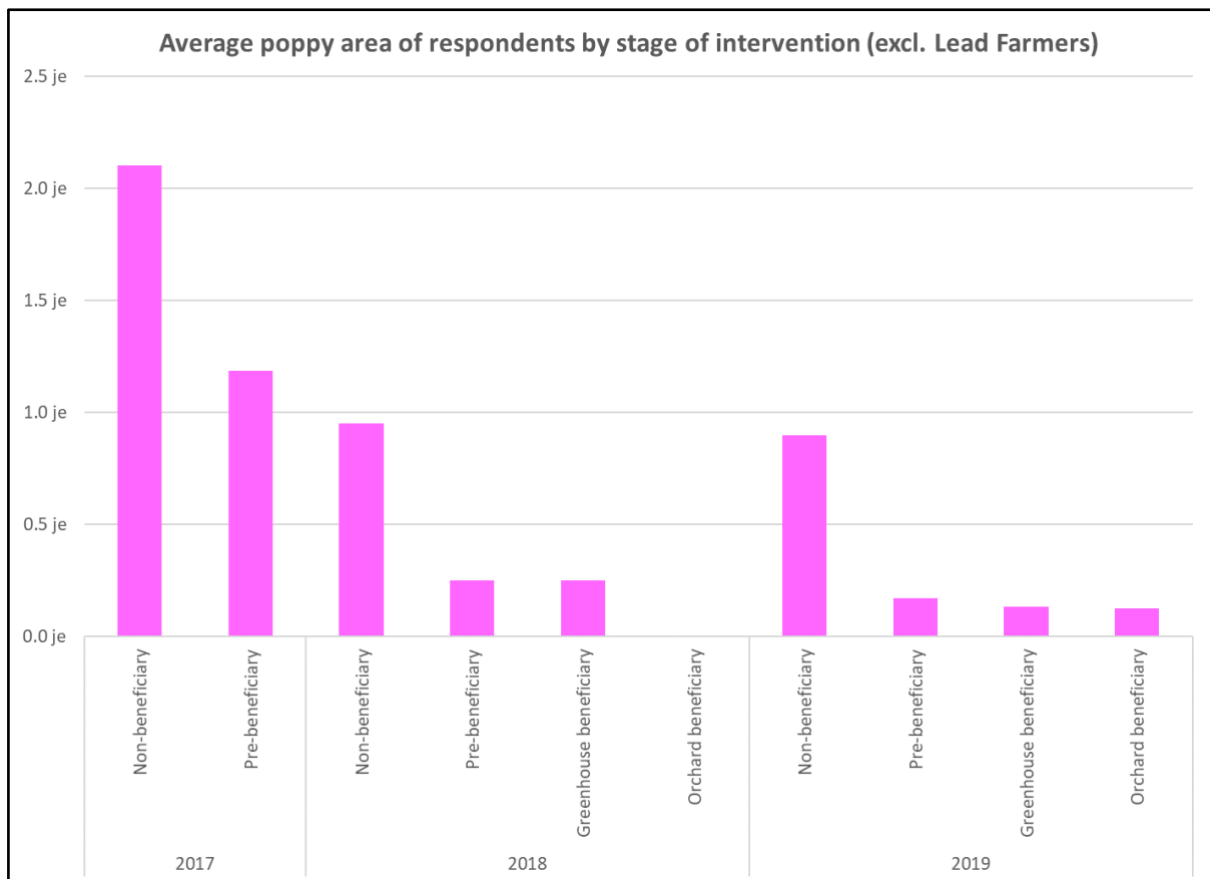
To investigate these linkages, respondents were classified for each year into one of four groups³³:

- **Non-beneficiaries**: those who had not been selected for any intervention by the time of the survey;
- **Pre-beneficiaries**: farmers who later received an orchard or greenhouse but did not get it in time to influence their cropping pattern for that year;
- **Greenhouse beneficiaries**: farmers who had a greenhouse constructed by the spring of that year;
- **Orchard beneficiaries**: farmers who had an orchard planted by the spring of that year.

The logic of income dependency and resource diversion suggests that greenhouse beneficiaries should show an immediate drop in poppy area, since the greenhouse will both absorb resources and generate income from its first crop. Orchard beneficiaries will have land and other resources tied up in the orchard from the first year, but the additional income will take some years to develop, and their income would actually drop in the first years if they did not grow intercrop; therefore the initial impact of orchards on poppy area via income generation and resource diversion is likely to be less than that from greenhouses.

³³ This part of the analysis excludes Lead Farmers since they are clearly different, both in their farming operations and in their interaction with the project.

In other words, greenhouse beneficiaries should reduce their poppy area more quickly than orchard beneficiaries, who in turn will reduce their poppy area more than non-beneficiaries. The following chart shows data to test this hypothesis:



The data for 2017 show a large difference between non-beneficiaries and pre-beneficiaries (those who would later become beneficiaries), indicating that those selected as beneficiaries were significantly different from other farmers in their communities, even before they received any project interventions.

The chart also shows that the majority of the fall in poppy area, for both beneficiaries and non-beneficiaries, took place from 2017 to 2018 before any interventions had been delivered. In 2018 there was no difference between the pre-beneficiaries and those who had already received a greenhouse, indicating that the act of giving someone a greenhouse did not have any immediate impact on their poppy production.

In 2019 the recipients of greenhouses and orchards had very slightly lower areas of poppy than the remaining pre-beneficiaries (i.e. those who did not receive their intervention until autumn of that year), but the effect is too small to be significant.

These results suggest that neither of the posited direct effects of high-value crops (reduced income dependency and resource diversion) played any significant role in the observed reduction in poppy area after 2017.

So why did the poppy area drop?

One possibility is that it had nothing to do with the project at all, and instead was driven by the large drop in opium prices in 2016-17 in line with the country-wide fall in the poppy area³⁴. If this is the case, then it would suggest that when opium prices rise again, so will the poppy area, despite what most respondents said in the survey.

Another possibility is that the project did have an effect, but through a different mechanism: community selection and discussions with local stakeholders took place in 2017, so it is quite possible that the project was already influencing cropping decisions by spring 2018 through perceived conditionality or coercion³⁵, or through a positive sense of expectation as people felt that finally “the government was coming to their village” and was going to support them³⁶. If this was the main mechanism through which the project led to a reduction in poppy cultivation, then it must be asked what will happen after the project ends and the expectations and perceived conditionality and coercion end with it.

Finally, it is possible that all of these factors play some role in farmers’ decision-making and that their relative importance may change over time, perhaps with the “conditionality & coercion” effect becoming gradually less important and the income effect growing as farmers become better at producing and marketing their crops.

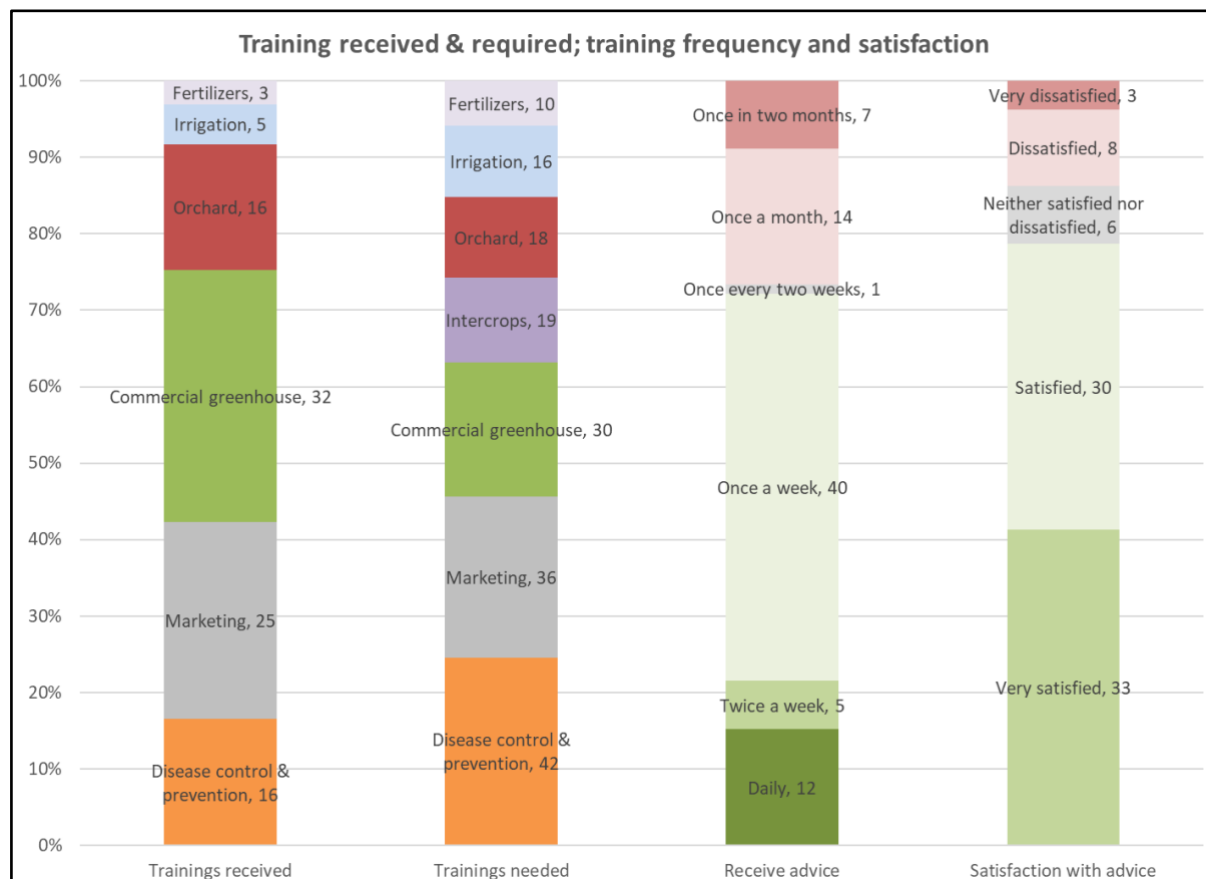
³⁴ The UNODC mid-term survey showed falls of up to 20 percentage points in the share of poppy in some areas.

³⁵ i.e. people believing that they would only get project support if they ceased poppy production and/or being told by community elders to stop growing poppy.

³⁶ The phrase “the government came to our village” was uttered several times during the group discussions in Nangarhar, referring to the project.

6.7 Advice and training

The following chart shows the training received and required by beneficiaries and Lead Farmers, together with how often they received training or advice and how satisfied they were with it. The figures show the number of times each response was given, and the height of each column section represents this value as a percentage of the total number of responses received³⁷:



The first column shows the subject matter of the training received and the second column shows the kind of training that beneficiaries and Lead Farmers would like to receive; all columns are shown as percentages for ease of comparison. Generally, the subjects offered align closely with the trainees' requirements, though they would clearly like to know more about disease prevention and control, about irrigation and about fertilisers. The biggest discrepancy related to intercropping, where 19 farmers said they would like to receive advice but none had been given.

In terms of frequency of training and advice, around half of respondents said that they received assistance around once a week. A few people said that they got training or advice daily; the project extension officers cannot visit every village that frequently, so this must either relate to advice from Lead Farmers or be a case of respondents wishing to present as positive a picture as possible.

Almost 80 % said that they were satisfied or very satisfied with the advice received, with only three respondents expressing strong dissatisfaction. However, some of the comments made

³⁷ So taking the first column, 3 farmers said that they received training on fertilisers, 5 received training on irrigation, 16 on orchards, etc.

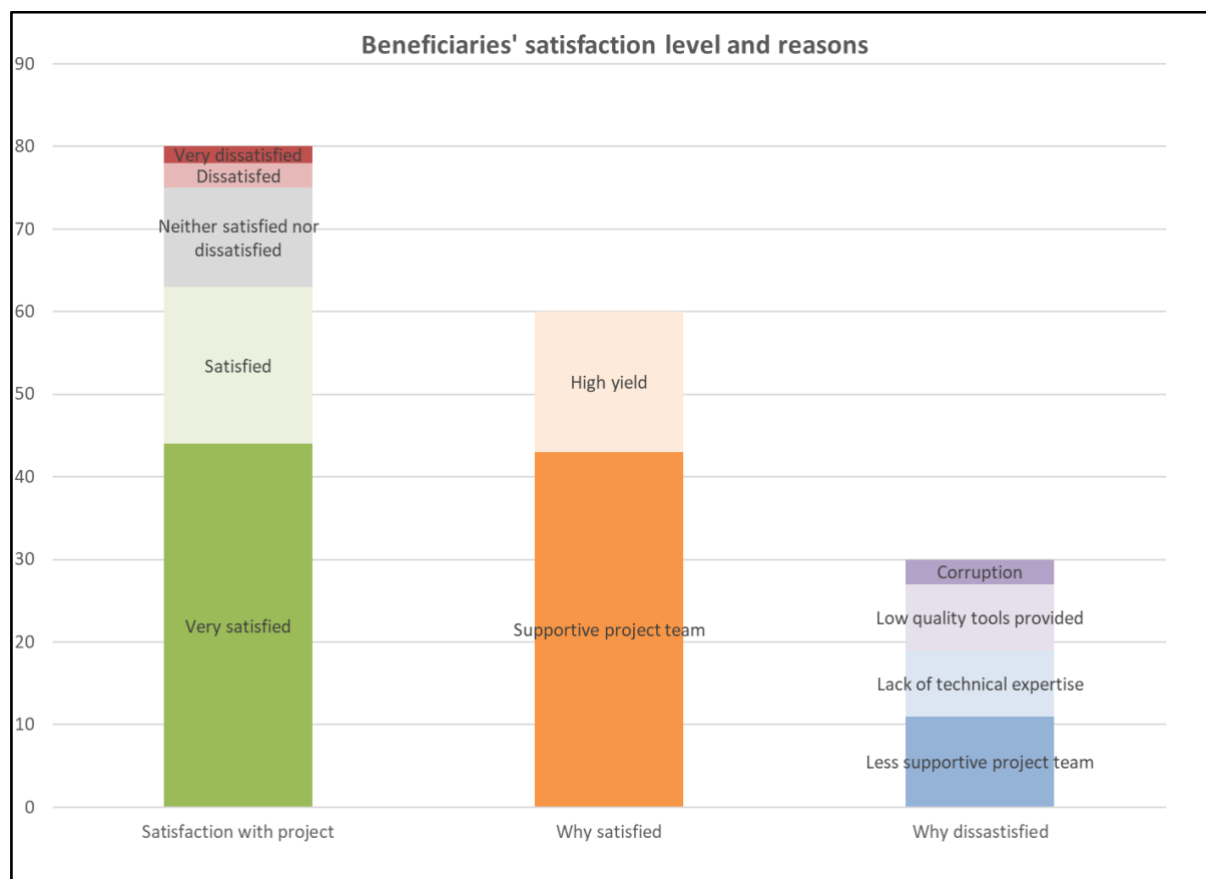
to the interviewer and noted in section 6.8.3 below, suggest that there were some problems with training being too theoretical, plus occasional language barriers.

6.8 Overall impressions of the project

At the end of the interview, both beneficiaries and non-beneficiaries were asked about their overall impressions of the project.

6.8.1 Beneficiaries

The following chart shows beneficiaries' overall level of satisfaction and the reasons why they were satisfied or dissatisfied:



More than half of beneficiaries said they were very satisfied, and a further quarter were satisfied. The main reason for satisfaction was a supportive project team, followed by the fact that farmers received a good yield from their high-value crops.

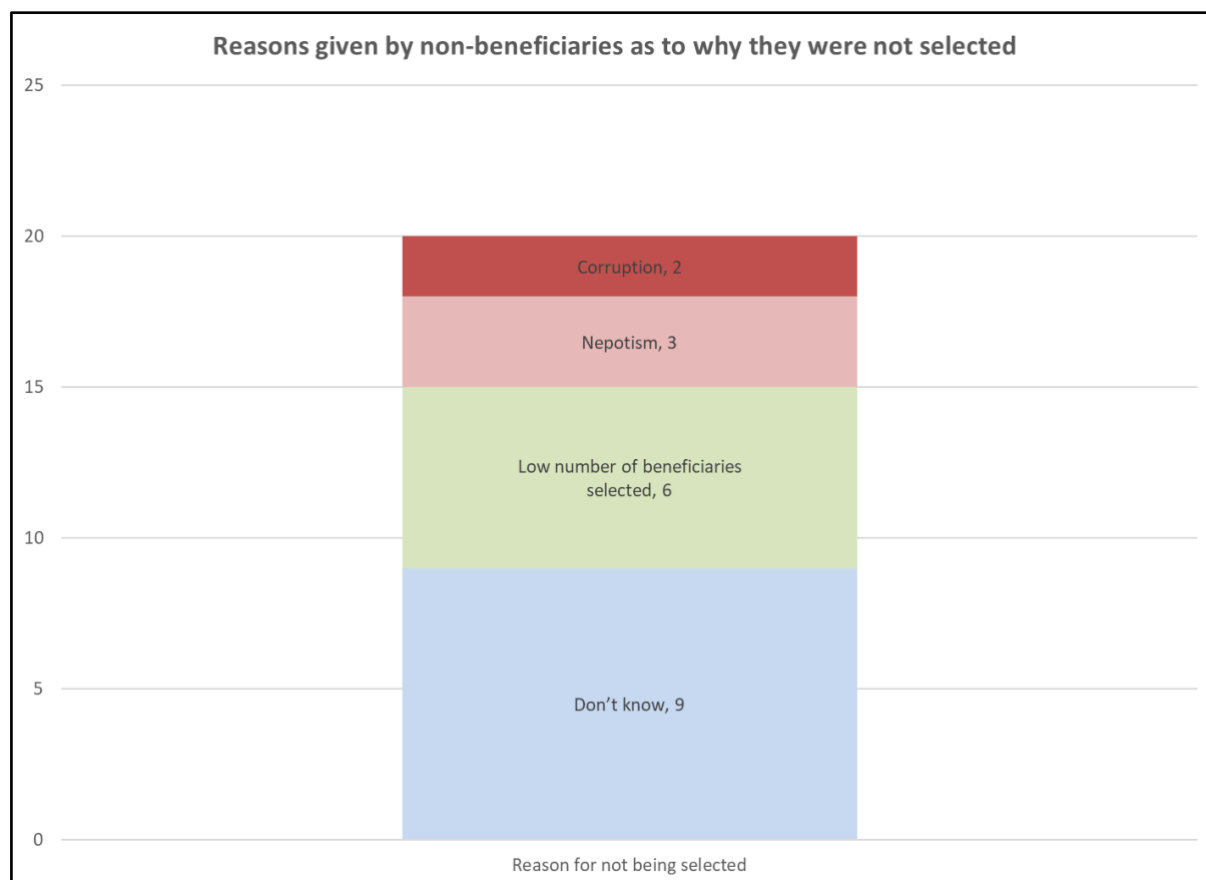
Reasons for dissatisfaction, which were sometimes given by beneficiaries whose overall rating was either satisfied or neutral, included a feeling that the project team was less supportive than it could be. Eight people each commented on the team's lack of technical expertise or the poor quality of the tools, and just three referred to corruption.

6.8.2 Non-beneficiaries

Almost all of the non-beneficiaries were aware of the CBARD project, with only one saying that they had not heard of it, though only four had been in direct contact with the project or its training activities.

Again, almost all of the non-beneficiaries said they would like to be included in the project; only one farmer said he did not want to be included but gave no reason.

When asked if they knew why they had not been selected for the project, non-beneficiaries (not Lead Farmers) gave the following responses:



Almost half who responded did not know why they had not been selected, with a third saying it was because there was a low number of beneficiaries overall. Corruption and nepotism were also given as explanations, though not so frequently.

6.8.3 Interviewer's impressions

Not all of the information given in interviews fitted neatly into the structured questions, and the consultant conducting the survey noted the following general points:

- The interventions tended to be concentrated amongst a limited number of families, sometimes with three or four separate interventions received under the names of different family members. It is questionable how long the community as a whole will be willing to forego profitable poppy production when they see most of the project benefits being captured by just a few families.
- Technical capacity and access to markets emerged as major challenges, and beneficiaries need more effective and hands-on trainings in disease prevention, marketing skills, intercropping and other similar topics.
- Training courses were often of limited value since they relied on Powerpoint presentations rather than practical demonstrations, and in some cases, training was given in a language not spoken by the trainees.
- Several Lead Farmers said that they had not been paid for the last six months.

6.9 Survey conclusions

This survey has shed light on many different aspects of these villages, including the nature of farming households, the strengths and weaknesses of project implementations, the outcomes of project interventions and their impact of poppy production.

Farming households

- Only 5 % of respondents said that agriculture was their main source of household income, with the rest all saying that they had multiple income sources. Thus, although they were all farmers in the sense that they grew crops, farming was not their main livelihood and other things – such as off-farm jobs, remittances and non-agricultural businesses – were more important sources of income³⁸. This suggests that development efforts in rural areas should not focus exclusively on agriculture, but instead look at the other sources of income that already exist and see how these might be extended.
- Double cropping was quite common, particularly amongst Lead Farmers, with the most usual combination being maize after winter wheat. This suggests that the alternative gross margin, against which both poppy and high-value crops are compared, may be significantly higher than that from a single crop of wheat.

Project implementation

- The project seems to have been successful in its aim to recruit Lead Farmers who were bigger and better than average: those in this sample were around twice the size of other respondents and had a much higher level of second cropping.
- The survey results confirm the findings of the third-party monitoring that there was significant under-delivery of inputs: less than half of orchard beneficiaries received tools or fertilisers, and few beneficiaries of any kind received pesticides. Respondents also complained about the quality and quantity of the inputs that they did receive.
- Greenhouses had specific problems: they generally took too long to build, frequently six months and sometimes more, the quality was often poor and in several cases the irrigation system was not installed at all³⁹.
- Farmers have little problem in finding inputs if they can afford them, so local input supply markets seem to work. This suggests that the project might be able to use a voucher scheme in place of physical distribution of inputs, provided adequate controls could be applied.
- In many cases project support has been concentrated on a few extended families, with different family members formally receiving different assets. Some non-beneficiaries believed they had not been selected due to corruption and nepotism.
- Training subject matter was generally well aligned with beneficiaries' requirements, though they would like to know more about disease prevention and control, irrigation and fertilisers. They also require training on intercrops, which so far has not been

³⁸ Over recent years the evaluator has looked at rural household income ten countries (Albania, Bosnia, Kosovo, Georgia, Iraq, Nepal, Macedonia, Montenegro, Serbia – and now Afghanistan) and so far failed to find a single country in which agriculture is the main source of rural income.

³⁹ This is in line with the findings of the third-party monitoring. The latest report for CBARD-West, covering January to July 2019, found seven greenhouses in Badghis province which had taken 6-18 months to build, indicating that this problem is common to both projects.

given at all. The main complaint about training was that it was theoretical rather than practical.

- Two-thirds of beneficiaries expressed overall satisfaction with the project, referring to a supportive project team and the good yields that they had obtained from their new crops. Those who were dissatisfied found the team less supportive or considered the tools and technical advice to be of poor quality.

Project outcomes

- Average production intensity has been considerably lower than forecast in the project's gross margin models: only half of orchard beneficiaries grew intercrops, a similar proportion of greenhouse recipients grew second crops, and greenhouses were sometimes left empty even in spring. The project might wish both to encourage more intensive production and to revise its models to give a more accurate reflection of actual results.
- There is so far no evidence of job creation beyond the beneficiary's immediate family.

Impact on poppy cultivation

- There was a large reduction in poppy cultivation from 2017 to 2018 across all types of respondents – Lead Farmers, beneficiaries and non-beneficiaries – in line with the fall observed across the country. This fall was a combination of some farmers stopping poppy cultivation entirely and others reducing the area that they grew.
- The large majority of respondents agreed with the statement that they would not grow poppy in future, with non-beneficiaries being somewhat more likely to strongly agree than beneficiaries. The response of non-beneficiaries suggests that any impact the project did have on poppy growing was *not* directly due to the effect of high-value crops in increasing income or absorbing resources.
- When these respondents were asked why they would not grow poppy in future, the answers were almost identical for beneficiaries and non-beneficiaries: in first place came the feeling that they would not get any support from the project if they grew poppies, closely followed by the reply that local authority figures told them not to grow poppy. This implied conditionality and coercion is unlikely to persist beyond the end of the project, and there may be some backlash before then if non-beneficiaries realise that they are not going to receive any support.
- The third most common reason for stopping poppy production was that respondents were not dependent on the income from poppies. However, this response was just as common amongst respondents who had not yet received any income benefit from the project (non-beneficiaries and orchard recipients without intercrops) as amongst those who were already generating new income (greenhouse recipients and orchard recipients who planted intercrops). This supports the idea that alternative income sources are important in moving households out of poppy production, but questions how big a contribution that project has made to this effect.
- The main reasons why some respondents will continue growing poppy are almost all to do with income: they need the income from poppy, are not confident that high-value crops will provide a reliable alternative, or find poppy to be the most profitable crop.

- High-value crops also have some impact in diverting resources away from poppy production. This effect is greater for land than for labour or capital, and greater for orchards than greenhouses. This finding, together with the much higher return on investment from orchards, support the previous evaluation report's recommendation that the project should focus more on orchards and less on greenhouses.

In plain language...

1. The project operates in very difficult conditions but is riddled with inefficiency and corruption. Suppliers systematically cheat and under-deliver, and so far the project has not managed to detect and curb these abuses in time.
2. It is almost impossible to say how much of the observed change in poppy production is due to the project and how much to external factors, particularly price. The UNODC surveys and analysis will be essential to answer this question.
3. The impact that the project has had is mainly due to people being told not to grow poppy, or told that if they do grow poppy they will not receive any support from the project. This effect is unsustainable and is unlikely to persist beyond the end of the project.
4. The direct effects of high-value crops in reducing poppy cultivation are more to do with providing an alternative income than with diverting the resources of land, labour and capital. Therefore, any alternative income source might be expected to reduce poppy cultivation.
5. The large majority of households in these areas obtain most of their income from sources outside agriculture; they farm, but farming is not their main livelihood. Therefore, initiatives to promote economic development and reduce poppy cultivation should consider all possible sources of income and not focus solely on agriculture.

7 Evaluation

This section addresses the ten issues of Relevance, Efficiency, Effectiveness, Perception, Impact, Sustainability, Coverage, Coordination, Coherence and Protection, as outlined in the TOR and using the 35 questions set out in the draft Evaluation Matrix. The only change to the matrix has been to separate “Perception and Impact” into two different criteria, since different approaches are required for each and impact can potentially be quantified in ways that perception generally cannot.

Results are presented as normal text rather than in tabular format, for readability. The initial statement of the evaluation questions is colour-coded following a traffic lights system to indicate how satisfactory the project is in each respect:

- **Green:** Project largely or fully satisfactory.
- **Amber:** Project partially satisfactory or results not yet known.
- **Red:** Project not satisfactory.

Questions of information, where the project itself is not being judged, have been left in black. The questions are identical to those for the previous evaluation, as are many of the answers. Particular attention is drawn to areas where CBARD-East differs from CBARD-West, or where the situation changed markedly from late 2018 to late 2019.

7.1 Relevance

Q 1) *Is the project design appropriate to address the substantive problem that the project is intended to address? How useful are the project outputs to the needs of the target beneficiaries?*

Q 1a) *Is the project design appropriate to address the substantive problem that the project is intended to address? (Unchanged)*

The project design is a relevant way to address the problem of low incomes for land-holding members of the treatment communities. Given that high-value crops can often generate higher margins than opium poppies, the design may also be appropriate for reducing opium production; whether high-value crops alone will be sufficient to achieve this remains to be seen, as the concept which this project seeks to prove.

Q 1b) *How useful are the project outputs to the needs of the target beneficiaries? (Unchanged)*

Very useful. The interventions are clearly appreciated by beneficiaries and the project is now receiving requests from other villages for similar assistance. The main interventions help produce crops with which beneficiaries are familiar and for which there is local demand, at least at the current scale of the project.

Q 2) *What is the value of interventions in relation to the national and international partners' policies and priorities (including SDG, UNDAF and UNDP Corporate Strategic Plan; ANPDF/NPPs, UNHCR regional strategy, etc.)? (Largely unchanged, with new point added on gender)*

The project is designed in line with the government's “Comprehensive Agriculture and Rural Development Priority Programme”.

It addresses the Key Results Area from the 2014-17 Strategic Plan for Outcome 1: *Growth and development are inclusive and sustainable, incorporating productive capacities that create employment and livelihoods for the poor and excluded.*

It also addresses UNDAF Outcome 1: *Economic growth is accelerated to reduce vulnerabilities and poverty, strengthen the resilience of the licit economy and reduce the illicit economy in its multiple dimensions,* which is also CPD Outcome 3.

The project also contributes to CPD Output 6: *Improved economic livelihoods, especially for vulnerable populations and women.*

In terms of the Sustainable Development Goals, the project contributes to:

- SDG 1: to *End poverty in all its forms everywhere.*
- SDG 3: to *Ensure healthy lives and promote well-being for all at all ages,* in particular
 - Target 3.4: to *Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol.*
- SDG 5: to *Achieve gender equality and empower all women and girls.*

At this stage, the project interventions appear valuable to the goals of poverty reduction and development of livelihoods. They are clearly relevant to the questions of the narcotic drugs and the illicit economy, but it is too soon to say how valuable they will turn out to be.

So far, the project has not established a clear link between gender and poppy production, and it is questionable whether it is efficient to address both SDG Target 3.4 and SDG 5 through the one project.

Q 3) Are the project objectives consistent with substantive needs and realistic in consideration of *technical capacity, resources and time available?* (Technical capacity down from Satisfactory to Partly satisfactory)

Q 3a) *Technical capacity*

The interventions implemented so far have been within the technical capacity of the project team and of the beneficiaries. As the new orchards approach their full yield potential, the marketing challenges will rise and the project team may find it more demanding to develop marketing skills than technical capacity. AgroBusiness Centres, if designed and implemented, could also be challenging, partly due to limited local capacity and partly because they might turn out to be a rather artificial response to the problems faced by businessmen and traders.

Q 3b) *Resources*

Scale remains a critical issue. Again, respondents pointed out that most of their community did not receive any direct support, and the treatment communities cover only a small proportion of the whole province.

The field survey indicated that the main long-term impact of high-value crops, once the project-driven factors of conditionality and coercion fade, will be through income generation rather than resource diversion. Therefore, it may not be necessary to cover large areas of land with high-value crops so that they cannot grow poppy, but it will be necessary to increase the incomes of large numbers of households that currently grow poppy. The current project is far too small to achieve these, and the limited size of markets means that it would be best to develop multiple alternative income sources and not to rely on a small number of high-value crops.

Q 3c) Time available

This project began one year after CBARD-West, in January 2018, and has now been extended until April 2022. Four years gives sufficient time to test the viability of the greenhouses but is far too short to gain a real impression of the orchards, since only the first plantings of grapes will have reached full yield by the time the project ends⁴⁰ and many of the orchards will not yet have produced any commercial quantities of fruit.

Therefore, the project will end before it is able to test the concept that the income from orchards can lead to farmers stopping poppy production. In retrospect, the project should perhaps have been designed for a much longer period, or with greater emphasis on high-value crops that reach maturity quickly, such as greenhouses and field vegetables rather than orchards. However, given the major role of orchards, it will be important to continue monitoring for some years after the current project end date, perhaps using the MAIL extension services for field monitoring.

The second timing issue concerns the persistence of community members' decisions not to cultivate poppies. It will be important to continue monitoring for some years to see whether farmers return to growing poppy when (a) the project is over and the community no longer feels constrained to act in a particular way in order to get project support, and (b) the opium price rises again through the normal market cycle. This could potentially be done by remote sensing through the annual UNODC Opium Survey and would not be too costly if the socio-economic survey element is dropped or repeated only occasionally.

The Project Document proposes a number of options for time-series evaluation, recommending that CBARD-East should be monitored until at least 2024, with optional follow-up studies in 2028, 2032 and 2036. Given the maturity period of the orchards, it is recommended that evaluation should continue until at least 2028 and preferably until 2032, ten years after the last orchards will be planted under this project.

7.2 Efficiency

Q 4) How well is the project managed, and how could it be managed better? (Down from Satisfactory to Unsatisfactory)

The slow disbursement, the multiple problems uncovered by the spot-check reports and confirmed by the field survey, and the confirmed instances of financial irregularity clearly demonstrate that the project has not been managed as well as it should have been. The management problems seem to have at least three root causes:

- i. The protracted reporting lines involving UNDP, MAIL, PAIL, DAIL, CDCs, suppliers and Lead Farmers, plus the practical and security challenges of visiting project sites, make it hard for senior management to know what is really going on and create lots of opportunities to hide inefficiency and financial irregularities.
- ii. Some of the individual project staff may not have the right capacity or approach to perform their roles effectively and honestly. It is also possible that political and personal influence on the recruitment process might have contributed to this problem, though this has not been confirmed.

⁴⁰ High-density apple orchards are projected to reach full production from year 6, and 15 % of peak yield by year 3; grapes also peak from year 6 but reach almost 50 % of maximum yield by year 3; pomegranates do not reach full yield until year 8, and only achieve 30 % yield by year 3; conventional apple orchards and pistachios take at least 10 years to reach full productivity and have no significant yield in year 3.

- iii. CDCs, many of whose members are illiterate, are generally not appropriate organisations to deliver interventions to individual farmers.

On the positive side, the project has been restructured to improve delegation (though the results will not become apparent until the new positions have been filled and given some months to operate) and the contract for third-party monitoring and spot checks provides a very valuable independent source of management information.

Q 5) *What is the project status with respect to target outputs in terms of quality and timeliness?* (Down from Partly satisfactory to Unsatisfactory)

The previous report noted that implementation by CBARD-West was behind schedule but, as section 3.4.4 shows, the situation is even worse for CBARD-East, with a disbursement rate of around 30 % compared to 40 % for its sister project.

One particular problem, which affected both projects, was the failure to procure saplings for planting in spring 2019. It is important to put in place an improved procurement mechanism to ensure this failure is not repeated.

The project has – quite correctly – focussed on the key interventions of orchards and greenhouses, but the supporting work on agro-business development and marketing has lagged behind. It is important now that the new Output 3 on marketing be implemented with vigour.

Irrigation should be the third big intervention and the one with potential to help the greatest number of people. Each project is unique, so implementation is considerably more complex than providing standardised orchards and greenhouses, but the fact that the latest quarterly report cannot show a single completed irrigation project is cause for concern. The project might wish to review this process, identify the causes of delay, and see if any action should be taken to ensure that this activity meets its target of 50 completed irrigation projects.

There has been no significant progress on delivering a Counter Narcotics campaign, which was supposed to reach 28,500 households every quarter. The project might wish to dispense with its communications team if it is unable to communicate.

Q 6) *What is the potential that the project will successfully achieve the desired outcomes?* (Unchanged)

The project is likely to achieve its goals in terms of establishing high-value crops for at least the target number of beneficiaries and has already exceeded the target for orchards. However, question marks hang over irrigation, agro-business, and the counter-narcotics campaign, with a real possibility that these outcomes will not be achieved. It is too early to judge whether the new marketing output will be delivered.

In terms of prompting a long-term switch from opium poppies to high-value crops, it is also too soon to say, and farmers' decisions will be influenced by a number of non-project factors, in particular the opium price.

The question of whether the project can deliver a successful “proof of concept” is addressed under Question 14 below.

Q 7) *To what extent were project start-up activities completed on schedule?* (Up from Information to Satisfactory)

CBARD-East was able to build on the established structures and completed studies of CBARD-West for a reasonably rapid start-up (problems generally arose later through slow implementation).

Q 8) *If there were delays in project start-up, what were the causes of delay, and what was the effectiveness of corrective measures undertaken? Do start-up problems persist? (Unchanged)*

If there were delays in project start-up, what were the causes of delay, and what was the effectiveness of corrective measures undertaken?

Start-up was not seriously delayed.

Do start-up problems persist?

One continuing problem, common to both projects, has been that of achieving adequate female representation, amongst the project team, lead farmers, beneficiaries and trainees. The project has worked hard on this and generally met targets for lead farmers and trainees, but it has proved much harder to attract and retain female project staff. This is part of the reality of working in Afghanistan, rather than a major project failing.

Q 9) *To what extent were adequate resources secured prior to project implementation? Did the project use the resources in the most economical manner to achieve its objectives?*

To what extent were adequate resources secured prior to project implementation? (Unchanged)

Adequate resources were made available from the outset of the project, in the sense that the availability of resources was not a practical constraint. The Inception Phase budget was increased from \$ 200,000 to \$ 356,000 to support the expanded scale of CBARD-W and CBARD-E combined, which allowed for the initial studies to be carried out on a larger area.

Did the project use the resources in the most economical manner to achieve its objectives?

This may be divided into three sub-questions: Did the project select the most economical interventions to achieve its objectives? Did it procure and deliver those interventions in the most economical way? Were the project management and support systems implemented economically and efficiently?

Choice of interventions (Unchanged):

Preliminary calculations indicate that the main project interventions of greenhouses and orchards have used project resources in a highly cost-effective manner and also suggest that conventional orchards will give the best return on limited project funds, provided the technical and marketing challenges can be successfully overcome to generate margins in line with projections.

- Greenhouses offer the highest gross margin per unit of land (typically \$ 30-40,000/ha) but are relatively expensive; over 15 years their projected Net Present Value is 7-9 times the initial project cost.
- High-density orchards are productive but expensive; they offer a similar margin per hectare and return on investment to that of greenhouses.
- Conventional orchards offer gross margins of \$7-12,000/ha but the direct costs of establishment are quite low so their Net Present Value can be 20-60 times the initial project cost.
- Economic projections for compost units indicate that they cannot be cost-effective under their original design. Calculations for raisin houses and cold stores show that

they may be cost-effective if the designs are modified to reduce cost and match their scale to local needs.

- Despite being highlighted in the previous evaluation report, no economic data or projections are yet available for irrigation investments, which is a significant omission for one of the major interventions. Experience elsewhere shows that works that expand the command area typically give good returns as long as the operating costs are not too high, but that canal lining to reduce water losses is often not cost-effective. This area requires further analysis.

Economy in procurement (Down from Satisfactory to Unsatisfactory):

In most cases there is no readily available benchmark against which to compare the price of procured goods and services. However, the confirmed irregularities in award of some contracts suggest that they are unlikely to have gone to the most competitive supplier, and the systematic under-delivery does not represent good value for money.

Management overheads (Unchanged):

The project budget allocates 80 % for operations and 20 % for “Project management, reporting and monitoring” by MAIL and then adds 8 % for “General management support” by UNDP, giving an overall management overhead of 25.9 % of the total budget. For such a complex project in an extremely challenging operating environment, this does not seem excessive, and the project has actually managed to reduce some of its overhead costs, for example by developing common mechanisms and cost-sharing central staff with CBARD-West.

Q 10) Is there an appropriate mechanism for monitoring the progress of the project? If yes, is there adequate usage of results/data for programming and decision making?

Is there an appropriate mechanism for monitoring the progress of the project? (Down from Satisfactory to Partly satisfactory)

The monitoring systems, involving Lead Farmers, project monitoring officers, inspection commissions to sign off completed works, Quarterly Reports and tracking tools, should in theory be adequate. However, the many failings detailed in the spot-check reports, and the fact that a substantial die-back of saplings went undetected for several months, indicates that these systems are not in practice performing as well as they should

The “APY” survey of Area, Price and Yield⁴¹ for greenhouse beneficiaries is very valuable but, as noted in the previous evaluation report, needs to be extended to orchard beneficiaries to see what is happening with intercrops, and also extended and adapted to the specific conditions of cold stores, raisin houses and irrigation projects.

As noted previously, in order to get a full picture of the economics of high-value crops, it will also be necessary to collect data on costs. Keeping full records of each income, outgoing and resource-using activity is time consuming and typically requires regular visits by project staff to transpose data from on-farm records and ask any necessary follow-up questions. This is therefore best done on a sample basis to get good-quality data from a moderate number of farms, rather than poor-quality data from every farm. An appropriate survey design should be drawn up but might include, for example, every Lead Farmer plus perhaps two non-lead

⁴¹ APY originally stands for “Area, Production, Yield”, but either production or yield can be derived from the other, and the survey usefully includes Price.

farmers per intervention per village, aiming overall to monitor about 30 farmers for each high-value crop. Recommendations were also given for monitoring the other kinds of intervention.

If yes, is there adequate usage of results/data for programming and decision making? (Unchanged)

The analysis and use of data continue to lag behind the achievements in monitoring. The previous recommendation to establish a structured project database had not been implemented by the time of this evaluation, and so training was provided on the database structure and maintenance. The new table in the latest quarterly report shows some improvement in use of monitoring data.

Q 11) *What are the potential challenges/risks that may prevent the project from producing the intended results? (Unchanged)*

The previous evaluation identified three main risks, relating to security, timescale and the future reaction of non-beneficiary households in treatment communities. This evaluation confirms those risks and adds a fourth risk of financial irregularity. The Risk Log and Security Assessment that form Annexes 6 and 7 to the Inception Report address the security issues comprehensively but do not include the other factors⁴².

Project communities were selected as being in government-controlled areas that were sufficiently secure to allow normal project operations, despite the High or Extreme UNDSS risk rating for the six project districts in Nangarhar. This project has been able to continue working in all its selected communities, unlike in Farah, where six of the treatment communities had to be dropped due to security problems. However, the project has a

⁴² Considering in turn the eight risks included in the Risk Log:

1. *Local producers forced or persuaded by anti-government elements to grow illicit crops* – Not apparently a major problem, with only two respondents in the field survey saying that they had come under pressure to grow poppy; active involvement of communities and their leaders seems to have averted this risk.
2. *Illicit products black market price increases, motivates farmer to grow illicit crops* – The proposed mitigation measure of *Government to identify and control black market* is currently unrealistic, so the economic analysis in this evaluation looks at the potential effect of future price rises.
3. *Targeted project locations will not be accessible due to security reasons to the project for a certain period or for the duration of the project* – Whilst it was possible to deliver interventions to all selected communities in Nangarhar, security has been an issue that has sometimes delayed implementation and hindered monitoring.
4. *Women's participation in CBARD will not be possible given some social/cultural restrictions* – This has been largely overcome through determined efforts by project staff to recruit female Lead Farmers and involve women in training activities.
5. *The provided technology will not be locally maintainable* – This has not generally been an issue, as most of the technologies employed are simple to maintain. The main exception is greenhouse irrigation and fertigation systems, where the field monitoring found beneficiaries who had not received training and did not know how to use this equipment.
6. *Agro-business infrastructures are utilized for illicit high-value crop cultivation* – No evidence of this yet, though it could become an issue for irrigation structures.
7. *Communities and individuals within the community are not willing to contribute land and labour to support their economic development* – So far this seems not to have been an issue, with beneficiaries eager to receive project interventions and apparently willing to contribute the necessary land and labour. Where an orchard or greenhouse has been established, it is clear that land has been provided, but the third-party monitoring and spot checks could not find much documentary evidence to show that other contributions had been made.

continual struggle to operate in many areas and has to adjust its operations to the ever-changing security situation.

As noted under Question 3 above, the original project duration is too short to allow effective testing of the concept of establishing high-value orchard crops in place of opium poppies. This risk can and should be addressed by extending monitoring for several more years.

The third risk arises from non-beneficiary households in treatment communities who believe that they have been promised project support in future. If this support is not forthcoming, then not only may these farmers switch back to opium production, but trust in MAIL and UNDP could decline sharply, making it harder to implement such projects in future.

At the time of the previous evaluation, allegations of financial irregularity had just arisen and were under active investigation; it was not appropriate for the report to go into details until the investigations had been concluded one way or the other, and so it simply noted that, in a country that almost tops the global ranking of the “Corruption Perceptions Index”, any project will face the risk of corruption. The completed investigations and the third-party field monitoring and spot checks found multiple examples of financial irregularity and under-delivery by suppliers, so it is now clear that this is a major problem throughout both projects.

7.3 Effectiveness

Q 12) Are the project’s objectives and outcomes clearly articulated, feasible, realistic? (Unchanged)

The project’ target outcome is stated as *Improved economic livelihoods, especially for vulnerable populations and women*. This is to be attained through two outputs:

1. *Local production of, and market for, high-value crops improved.*
2. *Community-based agro-business infrastructures (irrigation, transportation, agricultural facilities) are built, developed, and/or strengthened.*

The target outcome is clear, feasible and realistic, as is the first output. It has not yet been fully determined how the second output will be achieved but it is expected that the project will succeed in building, developing or strengthening these capacities to some extent.

Q 13) To what extent is the project logic, concept and approach appropriate and relevant to achieving the objectives? (Unchanged)

The logic, concept and approach are generally appropriate and relevant, apart from the limitation that four years (after project extension) will not be sufficient to measure the impact of the orchard interventions or to assess the long-term effect on poppy cultivation. This might be addressed through follow-up monitoring as proposed in the Project Document. However, the fact that the project duration is too short to measure the impact of orchards or to assess the impact of any high-value crop in a range of market conditions must be seen as a design weakness.

Q 14) Are the underlying assumptions on which the project intervention has been based valid? Is there a clear and relevant Theory of Change? (Unchanged)

The Theory of Change is stated as follows:

If there is community-based intervention to introduce and strengthen local production and marketing of traditional high-value crops, off-farm employment and access to finance in tandem with the construction, rehabilitation and development of

community-based agro-business related infrastructures in 100 opium producing communities in Nangarhar province, then there will be a marked increase in household incomes coinciding with a notable decrease in illicit crop cultivation and production.

Are the underlying assumptions on which the project intervention has been based valid?

The underlying assumptions are that (1) high-value crops offer a viable alternative to both illicit crops such as opium poppies and low-value licit crops such as wheat, and that (2) a marked increase in household incomes will coincide with a notable decrease in illicit crop cultivation. The project is presented as a “Proof of Concept”, thus explicitly recognising that both of these assumptions are yet to be proved.

Experience of other projects, such as the World Bank-funded “National Horticulture and Livestock Project” indicates that high-value crops do indeed offer a viable alternative, at least on a limited scale.

Evidence for the second assumption is more limited, with the Rand Corporation report noting that “higher rural incomes ... appear to be a necessary, if insufficient, condition for substantially curtailing the cultivation of illegal crops”. Whether the expansion of high-value crops does actually coincide with a long-term reduction in illicit crops is likely to depend on a number of factors outside the project’s control, including the price of opium, the perceived legitimacy of the government and the overall security situation. One of the challenges for the final evaluation will be to judge how much of the observed changes in opium production may be attributed to project interventions, and how much to external factors.

Is there a clear and relevant Theory of Change?

The Theory of Change is clear and relevant but might usefully acknowledge the role of external factors in determining the final outcome in terms of opium production.

Q 15) To what extent has the project managed to implement activities across the target project locations? (Unchanged)

As noted under Question 11 above, the project has managed to implement activities in all 100 selected treatment communities. The baseline study was successfully implemented in all 100 treatment and 49 control communities.

Q 16) To what extent has the project implemented activities as envisaged? To what extent have those activities contributed to achieving the project objectives? (Unchanged)

To what extent has the project implemented activities as envisaged?

In approximate chronological order, the project has implemented the following activities:

- **Baseline study and needs assessment** – conducted by UNODC from 2017 Q1; final report dated June 2018.
- **Value-chain studies** – were delayed but began under CBARD-West and so were completed in time to inform this project.
- **Access to finance study** – was conducted internally and presented to the Board at the end of 2018.
- **Identification of high-value crops** – the decision to focus on *traditional* high-value crops allowed them to be identified from desk study and local knowledge, without waiting for the outcome of the value-chain studies
- **Selection of treatment and control communities** – completed in the first half of 2018.

- **Selection of beneficiaries** – an ongoing activity carried out by Community Development Councils as successive interventions are delivered, applying the selection criteria developed by the project.
- **Establishment of greenhouses** – started in autumn 2017 in both provinces and has so far continued up to October 2018. In 2019 greenhouses will be delivered to treatment communities that have not yet received them, but with no new greenhouses to communities that have already been supplied.
- **Establishment of new orchards** – so far carried out in spring 2018; in 2019 the project will concentrate on a major expansion of the orchard area.
- **Construction of demonstration compost and worm compost units** – carried out from 2017 Q4 and completed in 2018, with no further units planned.
- **Construction of demonstration low-energy cold stores** – constructed in Badghis in 2018 Q3; construction in Farah could not be carried out before the winter, so the contracts will be fulfilled early in 2019.
- **Construction of demonstration raisin-houses** – contracted in Farah in September-December 2017, and in Badghis in July-August 2018.
- **Irrigation projects** – begun in 2017 Q4 immediately after community selection, along with the first greenhouses; second round of works contracted in 2018 Q3 in both provinces.
- **Distribution of beehive packages** – delivered in 2018 Q3 in both provinces.
- **Distribution of kitchen garden packages** – delivered in 2018 Q2-3 in both provinces.
- **Distribution of horticulture tool packages** – implemented as a separate activity in 2018; from 2019 will be an integral part of the orchards package.
- **Training, support, advice and monitoring** – implemented continually since the first interventions in 2017 Q4.

The following activities have not yet begun full implementation:

- **Trellising of existing vineyards** – was planned for 2019 alongside trellising of new vineyards planted in 2018, but not yet implemented.
- **Support for marketing** – detailed design still under development, though the project has already helped to connect producers of greenhouse vegetables and inter-crops to local markets. Marketing activities for orchard crops cannot begin at full scale until the new orchards start to produce.
- **Communications campaign on advantages of licit over illicit crops** – a limited campaign was carried out early in the project, but the planned series of quarterly campaigns has not yet begun.

The following planned activities have been cancelled:

- **Access to finance component** – as the study on access to finance concluded that there were no suitable finance or micro-finance institutions operating in rural areas.
- **Establishment of AgroBusiness Centres** – concept still under discussion. This was originally planned as a large-scale activity requiring a feasibility study. Procurement of a local firm to do this study began in 2017 but there were so few firms with the necessary capacity that it took more than a year to select a firm; in the end it was not

contracted as the project was not convinced that it would be able to deliver a quality product. UNDP and the project are now discussing with partners whether this planned activity is still appropriate.

Apart from the decisions on the “access to finance” component and the AgroBusiness Centres, all activities were implemented as envisaged in the Project Document, with no new activities added.

To what extent have those activities contributed to achieving the project objectives?

The initial studies and selection processes were an essential precursor for implementation of further activities.

The greenhouses have already contributed to improved livelihoods for their beneficiaries.

Initial reports from beneficiaries, project staff and UNODC indicate that the project, coupled with the low opium price, resulted in a significant reduction in poppy production in the first year.

Q 17) *To what extent did the project start-up activities adhere to the agreed approach and methodology? (Unchanged)*

The start-up period followed the agreed approach.

Q 18) *To what extent have the project implementation modalities been appropriate to achieve the overall objectives? (Down from Satisfactory to Unsatisfactory)*

The mechanisms of project implementation include the initial decision to implement through Ministry of Agriculture, Irrigation and Livestock (MAIL), the role given to the Community Development Councils (CDCs), the system of Lead Farmers and Common Interest Groups (CIGs), and the project structure.

Implementation by MAIL

The project adopted the modality of implementation by the Ministry of Agriculture, Irrigation and Livestock (MAIL), using local staff (“NTAs”) paid by the project. This approach of national implementation is the one normally applied by UNDP and helps to develop sustainable local capacity as well as ensuring coherence between donor project and national policies. It was considered particularly appropriate in this case, since UNDP would be unable to implement directly in areas where its staff cannot travel.

The decision was also made to emphasise the role of MAIL and thus of the government in this project, and to present it as an alternative livelihoods project rather than one of counter-narcotics, so as to avoid the risk of backlash that can be provoked by eradication or other counter-narcotics actions.

In many respects, those decisions appear to be correct. They have allowed the project to work effectively in difficult areas and has given beneficiaries the impression that – finally – the government is doing something to help them. They also conveyed the message that the government was telling them to stop growing poppies, and in return would support them to develop alternative livelihoods.

However, the delegated implementation through MAIL created space for the various financial irregularities and documentary failings found by the spot checks, which would have been picked up immediately under direct implementation. The question for the project now is

what kind of implementation mechanism could be used in these areas, that would give better control than implementing through MAIL?

Role of CDCs

The second key decision was to give a large role to Community Development Councils (CDCs), in beneficiary selection, procurement and implementation. These are a key element of the government's development strategy and an institution with which UNDP works regularly. Any kind of decentralised administration brings challenges in monitoring and control, but the project has worked very hard to ensure that proper procedures are followed, in line with government guidelines for working with CDCs, and has begun implementing a rigorous programme of audits and spot checks.

UNDP project management are satisfied that the involvement of CDCs has resulted in a strong sense of local ownership, and UNDP's experience with this approach for over a decade shows that it contributes a lot to sustainability, but the spot check reports make it very clear that CDCs do not have the right capacity or approach to procure and implement in line with government procedures. It is also asking a local community organisation to take on an implementation role for which it is not appropriate – CDCs are good for local discussion and consultation, and for planning projects of community interest, but it is hard to see why they should be involved in delivering basic structures and agricultural inputs to individual farmers. The question of elite capture must also be addressed. The third-party monitoring, group discussions and field survey all found examples where interventions were concentrated amongst a few people or a small number of related households.

When this issue was discussed previously with the project team and field staff, they pointed out that the CDCs had been carefully constructed to represent all the main groups in the community, and so for them to reach consensus on the selection of beneficiaries, a relatively broad distribution of benefits was essential. It was also suggested that the way in which interventions were allocated within communities may in practice have targeted the larger and more influential opium producers, and so contributed directly to the community-wide move out of poppies.

More pragmatically, it was felt inevitable that some households would do better than others in the initial distribution of benefits and hoped that, with these needs satisfied, a second round of interventions would be able to reach a more typical cross-section of the community. It would require quite a sophisticated database, including family relationships between different households, to give a really objective measure of the extent of elite capture. Probably the best way to minimise the perceived unfairness would be to extend support to many more households in each target community and enforce a strict rule of one intervention per household.

Lead Farmers and Common Interest Groups

The project adopted MAIL's established *modus operandi* and previous donor practice⁴³ of selecting Lead Farmers in the Communities, forming growers of each crop into Common Interest Groups, and using the Lead Farmers to help support and monitor these groups. In implementing this, the project selected 6 female Lead Farmers as well as 34 males, thus ensuring that female beneficiaries could receive support and advice from another woman.

⁴³ FAO has previously worked with Lead Farmers, and other UNDP and World Bank projects have established Common Interest Groups.

Effectively, these Lead Farmers function as front-line extension workers, albeit with regular support from the project's District Monitoring & Extension Advisors. Much will depend on the Lead Farmers' knowledge and extension skills, as well as on the resources made available to them. It has not yet been possible to form an objective view of these farmers' competence nor the quality of the training they have received. There seems to be considerable scope to strengthen the project's extension activities, including producing a national set of high-quality extension materials and develop the most effective way for Lead Farmers and others to use them. This should be done in close cooperation with the MAIL extension staff, so that the benefits can be shared more widely and continued after the CBARD project ends.

In conclusion, the use of local farmers for regular support and monitoring was probably the only way in which the project could maintain almost daily contact with beneficiaries in remote and often-insecure areas.

Project structure

A final aspect of implementation modality worthy of comment is the project structure of national, provincial, district and local staff, down to Lead Farmers operating at community level. This structure is aligned with the regional structure of MAIL, with district- and province-level MAIL staff signing off on various project operations.

This approach helps to integrate the project into the MAIL organisation and offers a practical way of working round the significant travel challenges noted under Question 20 below, but the number of different levels involved can make management and monitoring difficult and probably contributed to the lengthy delay before senior management were made aware of the problem of sapling death in 2018.

Q 19) What factors have contributed to achieving/not achieving the intended results? (Unchanged)

Every project faces challenges. In addition to the factors of security and remoteness discussed under Question 20 below, the main challenges for the project have been:

- 1) ***Managing community expectations***, especially through the potentially divisive process of selecting one community but not its neighbour.
- 2) A ***protracted procurement process*** that must meet both UNDP and government requirements. Typically, it takes three months to contract a company, and around half this to sign a contract with a CDC.
- 3) ***Time-consuming procedures*** for recruiting international staff, which can take up to a year. In order to keep the project moving, it was decided to replace two staff positions with consultants, who could be recruited much more quickly.
- 4) ***Attempted elite capture*** of long-term project positions, with pressure brought to bear to favour a particular candidate. UNDP has always insisted that objective and transparent recruitment procedures should be followed, but the spot checks uncovered a number of cases of incomplete documentation.
- 5) ***Limited staff numbers*** particularly for demanding technical positions in the project, such as engineers and extension specialists. The revised organigram includes two new engineer positions, though both are for CBARD-West.
- 6) ***Attitudes to the participation of women*** required a lot of hard work at community level to achieve the 20 % target for beneficiaries and Lead Farmers, and to get them accepted by the community.

- 7) *Securing the community contribution*⁴⁴ while working in some of the poorest communities in the country. This has generally been addressed by valuing the beneficiaries' in-kind contribution but in some cases is still a constraint. It also proved hard for the spot check consultants to find documentary evidence showing exactly what was contributed, since CDCs keep few written records.

Q 20) *To what extent do external factors, such as logistical or security constraints, have impacts on project implementation? (Unchanged)*

As noted under Question 11 above, security concerns affect many aspects of project implementation, for example in determining when and where project staff can travel. When project provincial staff wish to travel to a treatment community, they request community leaders to come to the province centre, sign a written guarantee for their safe passage, and then escort them to the project area.

The time and costs of travel and transport also have a significant impact on project activities, and are due to a combination of poor roads, remoteness and security concerns. These may well have contributed to some of the long delays in completing greenhouses.

Another external factor is gender inequality and attitudes to women which, as noted above, required considerable efforts by the project team to achieve even 20 % participation of women in training activities and as Lead Farmers.

7.4 Perception

Q 21) *What is the wider perception of the project, its image, applicability and performance? Are project communications effective in positively promoting the project to a wider audience?*

What is the wider perception of the project, its image, applicability and performance? (down from Satisfactory to Partly satisfactory)

Beneficiary representatives and project staff report that the project is well received in the treatment communities and regarded with some envy by neighbouring communities. The Agriculture Working Group in Nangarhar province regularly brings together all the main development organisations working with MAIL, so the project is well known in this circle if not by the wider public. Unfortunately, the problems of financial irregularity, which involved lengthy investigation resulting in the dismissal, reappointment and then final dismissal of the project's Provincial Coordinator for Nangarhar, did little to enhance the project's reputation.

The reaction of beneficiary communities has been very positive in the province of Nangarhar, which had received very little project support for more than a decade. The visible delivery of substantial support by a government ministry has brought a strong sense of local ownership and commitment and given people a sense that finally "the government has come to our village".

⁴⁴ Annex 4 to the Inception Report sets out the "Horticulture Implementation Methodology", including the requirements for community contribution in each case. This is generally in the range 10-20 %, sometimes as labour or other in-kind contribution, and occasionally in cash.

Are project communications effective in positively promoting the project to a wider audience? (Unchanged)

Communication with the donor and the wider public was previously identified as one of the project's weakest points. The project has now recruited staff to design and implement a proactive communications campaign, though this has not yet been implemented.

7.5 Impact

Q 22) What are the results (or preliminary results) of the intervention in terms of changes in the lives of beneficiaries against set indicators? (Unchanged)

Both the UNODC survey and the field survey report a substantial drop in poppy cultivation in the treatment villages, though non-beneficiaries were as likely as beneficiaries to move out of poppy and there was also a big drop in the control communities. It can therefore be said that fewer people are exposed to the harmful effects of opium production, even if this cannot be entirely attributed to the project.

In the field survey, more than half of beneficiaries said they were very satisfied with the interventions they had received, and a further quarter were said they were satisfied. Orchard beneficiaries do not yet have fruit to sell, but greenhouse beneficiaries reported an income of 10-30,000 Afs (\$ 130-390) per crop of cucumbers.

7.6 Sustainability

Q 23) What are the Implementing Partner's resources, motivation and ability to continue implementing activities until the end of the project? (Unchanged)

MAIL is fully committed to the project and willing to continue implementation under current arrangements until the extended end date of the project. It was planned then to hand over to the MAIL province offices ("PAIL"), though it is not yet clear what resources will be made available for continued monitoring and support or whether MAIL itself will go on to deliver further interventions.

However, the precise way in which MAIL is involved with project implementation may change in the light of any new implementation arrangements designed to reduce scope for irregularities. MAIL's future "resources, motivation and ability to continue implementing activities" cannot be fully assessed until those new arrangements have been designed and discussed.

Q 24) Is there adequate all-party commitment to the project objectives and chosen approach? (Unchanged)

There appears to be strong commitment from INL, UNDP, UNODC and MAIL, with no significant issues reported.

Q 25) To what extent is there constructive cooperation among the project partners? What are the levels of satisfaction of government counterparts, donors and beneficiaries? (Unchanged)

To what extent is there constructive cooperation among the project partners?

Cooperation generally works well, with frequent contact between all partners.

What are the levels of satisfaction of government counterparts, donors and beneficiaries?

At this stage in the project, there seems to be a high level of satisfaction amongst government counterparts and beneficiaries. The donor is naturally concerned about the project delays and financial irregularities, but working actively with UNDP to find reliable solutions for the future.

Q 26) *What has been the quality of implementation of the implementing partner, and if applicable where are there specific areas for improvement? (Down from Satisfactory to Partly satisfactory)*

What has been the quality of implementation of the implementing partner?

MAIL has proved an active and committed implementing partner, and most of the team that has been hired to manage and implement the project exhibits a high degree of technical competence. However, the specific modalities of implementation by MAIL may have contributed to slow disbursement and left opportunities for financial irregularity.

If applicable where are there specific areas for improvement?

As recommended previously, more attention should be given to robust economic analysis of the proposed interventions, with emphasis placed on those that offer the best returns and benefit a large number of people.

The underlying causes of slow procurement and delivery need to be investigated and addressed.

Monitoring and control must be improved to avoid future irregularities and ensure that when problems do arise, they are rapidly brought to the attention of senior management.

Q 27) *What is the likelihood that the project results will be sustainable in terms of systems, institutions, financing and anticipated impact? (Unchanged)*

The institution of MAIL is an established part of the government structure and budget, and thus the main implementing partner is clearly sustainable.

The specific project systems of Lead Farmers, District Monitoring & Extension Associates, technical specialists and managers at district, province and national level are dependent on the project budget and it is not yet clear how much of this structure MAIL would retain after project completion. However, MAIL uses similar arrangements for some of its other projects and so could continue the system if finance allowed.

In terms of impact on livelihoods, the greenhouses quickly start to generate net revenue – as do orchards when intercrops are grown – so farmers should be able to continue them even without project assistance. Probably the biggest need for continued external assistance will be for technical support in pest and disease management, where farmers most commonly recognise the need for specialist advice. When it comes to considering post-project arrangements, MAIL might wish to prioritise this area.

Given that the project has not yet begun its marketing activities, it is too early to assess their likely sustainability.

The real question is whether farmers will continue not growing poppies once they realise that there will be no more interventions from the project. Will they go on to grow high-value crops instead of poppies, or to grow high-value crops as well as poppies? The answer to this is not yet known, and is part of the concept that this project set out to test.

Q 28) What is needed for the project intervention to be adapted/replicated further?
(Unchanged)

The main need is for money to build greenhouses, plant orchards and improve irrigation on a much larger area. If funds can be secured for a major scaling-up, then a lot more attention will need to be given to marketing, processing and in some cases, exporting.

7.7 Coverage

Q 29) Which groups have been reached and what is the different impact on those groups?
(Unchanged)

As a matter of principle, MAIL works with all groups in its project areas, neither discriminating nor setting targets or quotas. No information is available on the profile of beneficiaries, but there has been no suggestion of discrimination by ethnic or linguistic group or other characteristic.

However, there is one respect in which the project approach will exclude some people rather than others, which is the unavoidable requirement that they must have land on which to establish orchards, greenhouses etc. The project does not directly reach the landless though they might benefit indirectly from employment by producers of high-value crops, or suffer through the loss of employment in producing opium.

7.8 Coordination

Q 30) What are the effects of coordination or lack thereof at district/province/national level? (Down from Satisfactory to Partly satisfactory)

As discussed under Question 18 above, the hierarchical management model from Kabul fits with the overall structure of MAIL. There is active involvement throughout the chain, for example, in requiring a MAIL official at province level to sign off each of the monitoring reports. However, there is still a sense that senior management is not receiving full and timely information from the field, and that the multi-layer model may provide too much space for people to hide their lack of results and deviation from established procedures.

7.9 Coherence

Q 31) What are areas and ways of cooperation with other UN and donor agencies in regard to set goals and objectives? (Unchanged)

The strongest cooperation is with UNODC, who are implementing the monitoring component of this project. The two organisations work together closely and report to the same management board for the UNDP CBARD projects and the UNODC BADILL project. There were initial problems with data exchange but UNODC is now providing community-level data to UNDP, albeit it in a textual and pdf format which makes any further analysis almost impossible.

The project deliberately selected treatment and control communities that were not subject to other interventions, so confounding interaction with other projects is generally low.

The Provincial Technical Working Group in Nangarhar supports regular cooperation with all the other development organisations working with MAIL in the province.

Q 32) What is the existing national policy on agriculture and rural development? (Unchanged)

The most recent statement of agricultural policy may be found in the July 2018 “Agrobusiness Charter: Comprehensive Strategy and Action Plan: 2018-2023”. It sets out a vision of an agricultural sector made up of “highly productive and profitable value chains that:

- a) effectively link small and medium size agricultural producers to markets, inducing productivity gains and increasing prosperity through income diversification and value-addition processes;
- b) supply higher-valued and differentiated food, fibre and feed to consumers at local, regional and global markets;
- c) lead to retention of a higher proportion of returns to farmers;
- d) act as an effective basis for industrialization, providing employment and entrepreneurial opportunities in both rural and urban areas”.

The project’s focus on high-value crops and their marketing is fully in line with this vision.

Q 33) Is there coherence across policies of different donor agencies and national stakeholders? (this criterion should be assessed to the extent possible) (Unchanged)

MAIL supports a common approach on livelihood projects and extension – including in management structures, the formation of Common Interest Groups and the selection of Lead Farmers – which has been applied successfully for at least 10 years, for example with the World Bank-funded “National Horticulture and Livestock Project”. This has brought consistency across projects and contributed to the relatively rapid start-up of CBARD-W.

The main drawback has been a tendency to stick with established ways of doing things – such as with the original idea of group marketing organisations at community, district, province and national level – but the project is challenging this approach when necessary and trying to find which approach has the greatest chance of success, for example, with the new Output 3 on marketing.

7.10 Protection

Q 34) Is the response adequate in terms of protection of children of different groups? (this criterion should be assessed in regard to what measures/actions need to be taken to provide, for example, support systems for children with disabilities, as/where applicable) (Unchanged)

The project works at the community and household level and does not collect data on individual household members other than the Lead Farmers and the name and contact details of the direct beneficiary. There were no specific actions on child protection, nor were specific project threats identified in the Project Document or Inception Report.

The most relevant issue is the common practice of involving children in harvesting opium from poppies, which is both a form of child labour and a direct risk to their health. If the project is successful in inducing a long-term shift away from opium, children will be amongst the first to benefit.

7.11 Changes from the previous CBARD-West evaluation

This evaluation paints a rather more negative picture than that of CBARD-West performed one year earlier. Of the 34 evaluation questions, the score for 24 questions was unchanged, the score for all or part of 9 questions was lower, and the score for just 1 question was higher⁴⁵. There are four main reasons for this more negative assessment:

- 1) CBARD-East has performed differently from CBARD-West: it has disbursed at only three-quarters of the rate, more concerns have been expressed about the competence and performance of the local team, and the most serious instances of financial irregularity arose in CBARD-East.
- 2) This evaluation had access to two major sources of information that the previous evaluation did not – the field survey and the reports of third-party monitoring and spot-checks. These revealed a number of serious problems of implementation that were not apparent a year ago.
- 3) The allegations of financial irregularity arose as the previous report was being prepared, and it was not appropriate to comment on them while the investigation was ongoing. Now that irregularities have been confirmed and one senior project employee dismissed, this must be recognised as a serious negative mark.
- 4) At the end of 2019 several activities were proceeding slowly or had methodological weaknesses, but a number of actions were already underway to address these problems. There was then every reason to assume that these actions would be effective and that progress would accelerate. One year later disbursement has failed to rise for either CBARD-West or CBARD-East and there is a sense that slow delivery is becoming the accepted norm. It is no longer reasonable to give the project the benefit of the doubt, and so this evaluation concludes that more radical action may be needed to get the project back on track.

⁴⁵ Start-up activities, where CBARD-East was able to build on the established structures and completed studies of CBARD-West for a reasonably rapid start-up.

8 Conclusions and Recommendations

The Terms of Reference added the following five points to be addressed in the Conclusions and Recommendations:

36) The MTE will include a section of the report setting out the evaluation's evidence-based conclusions.

37) What corrective actions are recommended for the design, start-up phase, managerial arrangements and project implementation, including sustainability of the project? An actionable recommendation table should be included in the report, and succinctly summarized executive summary.

38) What actions are recommended to follow up or reinforce initial benefits from the project?

39) Identification of major challenges and risks to project implementation, as well as any opportunities for maximizing benefits and achievements.

40) What are the main lessons that can be drawn from the project experience that may have generic application?

This chapter addresses those questions, detailing the main current challenges and risks, presenting a detailed set of recommendations, and also reviewing the current status of implementation of the recommendations made by the previous evaluation reported and adopted in UNDP's Management Response.

8.1 Challenges and risks

The challenges and risks that emerged most strongly from this evaluation are:

- 1) The ongoing security risks and consequent difficulties of working in the field.
- 2) The ever-present risk of financial irregularity in a country that scores close to the bottom of the Corruptions Perception Index and where UNDP is unable to control and monitor implementation directly due to the security situation.
- 3) The risk of a backlash from non-beneficiaries in target communities if they do not see benefits from the project.
- 4) The risk that both beneficiaries and non-beneficiaries will resume poppy production when opium prices next rise.
- 5) The risk that both beneficiaries and non-beneficiaries will resume opium production when the project ends.

8.2 Recommendations

This section presents a series of recommendations to improve the effectiveness and efficiency of the CBARD-East project, as well as some suggestions for follow-on or additional activities. Where appropriate, explanatory text from section 7 is repeated here to put the recommendations in context. In some cases, the recommendations are a repeat of those that were made in the previous evaluation report but have not yet been fully implemented, and this is noted. A full list of recommendations is included immediately after the Executive Summary.

Recommendations marked with an asterisk (*) are to some extent “strategic recommendations” in that they are not fully under the control of the CBARD projects but will need to be addressed more widely by INL, UNDP, UNODC or other organisations. These represent the “main lessons that can be drawn from the project experience that may have generic application”. Here UNDP’s management response might include raising the issue with relevant parties.

8.2.1 Monitoring and analysing the impact of interventions

For the project to make good management decisions and provide sound advice to farmers, it needs a reliable information base. The recommendations in this section will help to develop that information base and feed into the economic analyses.

Project database

The project has made some progress in developing its monitoring database, but this should now be extended to create a full Access database of all interventions, beneficiaries, contracts and expenditure, as discussed during the evaluation mission.

For data exchange with staff in the provinces and districts, it is recommended that this should initially be done through well-structured spreadsheets including data validation and drop-down lists. Monitoring staff in Kabul should check all new and updated data, and resolve any queries with the regional staff before importing into the main database. The validated data can then be exported as spreadsheets and sent back to the regions for reporting and further data entry. This approach will ensure good quality control whilst enabling regional staff to continue using software with which they are familiar.

At a later stage the database might be extended to allow online entry, but should continue the principle that additions and amendments from the field must be checked by central staff before being written into the main database.

One common database should be developed for both the CBARD-East and CBARD-West projects, and might later be extended to other projects as well.

Recommendation 1 *Finish converting the existing spreadsheet records into a structured relational database, and ensure that future data are properly checked and coded before import.*

Benefit: Robust project tool able to produce a wide range of reliable reports and to support further analysis leading to better management decisions.

Data exchange with UNODC

Data exchange with UNODC is much improved from one year previously. However, data in the UNODC pdf reports are in a text format which is not suitable for further analysis. It is therefore recommended that the data in the UNODC pdf reports should also be provided in Excel or database format; given that these data have already been released in text format, no new issues of confidentiality should arise.

Recommendation 2 *Arrange procedures for regular transfer of relevant data from UNODC databases in Excel or database format*.*

Benefit: Comprehensive data readily available to the project team to analyse the impact of its interventions.

APY survey

The project has instituted a very useful “APY” survey of Area, Price and Yield amongst its greenhouse beneficiaries. This approach focuses very well on the three most important factors without consuming a lot of resources in data collection. It should now be extended to all individual interventions, including cold stores, raisin houses and orchard intercrops. As recommended last time, a suitable monitoring tool for cold stores and raisin houses might be a “stock book” where the farmer records everything that comes in or goes out, together with its origin, destination and price where relevant.

As recommended last time, it would be useful also to collect cost data from a small sample of farms, in order to generate complete gross margin budgets.

Recommendation 3 *Extend the “APY” survey to all individual interventions and add sample-based collection of cost data to produce full gross margins for each high-value crop, including orchard inter-crops.*

Benefit: Robust project tool able to produce a wide range of reliable reports and to support further analysis leading to better management decisions.

Record-keeping and analysis of irrigation projects

As recommended previously, the project should assess the economics of its irrigation investments, and also collect actual data from at least a sample of completed projects to see how they perform in practice.

Irrigation projects are quite diverse and difficult to assess. As a minimum, for each intervention there should be a record of the command area before and after the works. Then, for at least a subset of the irrigation projects, there should be records of the number of waterings and of the crops grown, matched to the APY records that are already being maintained.

Recommendation 4 *Keep records for a representative sample of irrigation project and demonstration activities so that costs and benefits can be calculated.*

Benefit: Reliable data to establish which of these activities is worthwhile, providing extension workers with information to promote the profitable activities and establish benchmarks for farmers.

Further analysis of high-value crop margins

As recommended previously, the project should use actual data from its APY survey to update the gross margin budgets and cash-flow created for the main greenhouse and orchard crops, with input from local experts. This will show whether or not they really perform as projected and may highlight areas for attention. If data do show that ordinary farmers obtain good results in practice, then this should provide a solid basis for promoting high-value crops to other farmers.

Analysis could also look at the outliers – those farmers who perform markedly better or worse than average – to find some of the keys to success and mistakes to avoid. This would provide very valuable material for extension workers and provide them with some real-life examples of local best practice.

Recommendation 5 *Update and extend the analysis of high-value crop margins using data from project monitoring.*

Benefit: More reliable data on the costs and benefits of different high-value crops and a powerful tool to help extension workers promote best practices.

Solving the monitoring problems

The third-party field monitoring and spot checks have revealed consistent sets of problems that had not previously been reported through the project monitoring system. Given that photographic evidence exists and that the field survey found identical problems of poor quality and under-delivery of inputs, it seems that the reports of the third-party field monitoring and spot checks can be believed.

It is important to understand how this discrepancy arose and to ensure that in future the internal monitoring system detects and reports problems rapidly. The evaluator did not hear any explanations of how these discrepancies might have arisen, but theoretical reasons for problems going un-reported might include:

- Monitors not actually going to the field (if this problem were confirmed, an appropriate response might be to discipline those responsible and strengthen management, possibly with more photographic evidence from monitoring visits);
- Monitors visit the sites but do not look at the right things or ask the right questions (response could be to improve checklists and training);
- Project staff were involved in financial irregularities and deliberately failed to report problems (find and dismiss those responsible);
- Project staff were put under pressure to give a favourable report (investigate how this arose and find ways to support staff).

Recommendation 6 *Investigate why project monitoring failed to detect or report some problems, and then take action to avoid recurrence.*

Benefit: Better informed management, ultimately leading to better implementation.

8.2.2 Project management

More focussed role for CDCs

The Citizens' Charter foundation explains⁴⁶ that Community Development Councils (CDCs) lie at the heart its vision for partnership between the state and Afghanistan's thousands of communities. Some 35,000 CDCs have been established throughout the country, with democratically elected members trained to implement basic development projects. These CDCs are tasked with planning, negotiating, and managing development investments as a unique way of providing cost-effective, large-scale service delivery even in hard-to-reach parts of rural Afghanistan.

In line with this vision and with the CDCs' established position in rural areas, they have been given a major role in implementation of CBARD and many other projects. However, the spot-check reports have found, almost without exception, that CDCs do not have the capacity to procure and implement in line with national procedures. It takes time and resources to build such capacity in any country, but widespread illiteracy amongst CDC member is one fundamental problem that will take a considerable time to resolve.

⁴⁶ <http://www.ccnpp.org/Page.aspx?PageID=15>

Given that resources are always limited, UNDP might wish to consider which are the fundamental long-term roles of CDCs, where it is worth investing in capacity building, and where CDCs are only playing an interim role whilst markets develop.

CDCs are essentially representative community organisations that have a vital role to play in identifying needs and then designing and overseeing projects for the common good. They also help to link the project and MAIL to the community and so contribute to the sense that “finally the government has come to our village”.

Village irrigation schemes are a good example of public good projects that benefit many people and require community action to implement, whilst an orchard or greenhouse for one individual farmer is a private good with no particular need for community action, and the supply of common agricultural inputs such as seeds and fertilisers is a task which, in a functioning market economy, is entirely the job of the private sector. The ideal future situation, which both government and donors are working towards, is one where competitive, efficient private businesses provide farmers with market goods and services, whilst government upholds market standards and fair competition, and ensures the delivery of public goods.

It is therefore recommended that the project should no longer use CDCs to procure and implement contracts for individual farmers, but instead work with them for consultation, identifying needs, reaching consensus and bringing the community together for common action, whilst using the procurement mechanisms and voucher schemes discussed above to supply greenhouses, orchards and variable inputs.

Recommendation 7 *Change the way of working with CDCs to focus on interaction with the community, rather than procurement and contract implementation.*

Benefit: Reduced scope for delays and irregularities; better development of both CDCs and commercial input suppliers to fulfil their specific roles.

Strengthening vertical teams and delegation

The previous report recommended strengthening vertical teams and encouraging delegation, including hiring a Deputy Project Manager and appointing team heads. These recommendations have been adopted in the new organigram but not yet implemented.

The project should follow through by appointing the new staff, training, encouraging and supporting them to accept responsibility, and helping the Project Manager to delegate effectively. The project has also created a new international position of Programme Coordinator; once this person is in place, he or she should support the project management team.

Recommendation 8 *Implement and support the new management arrangements, with a Deputy Project Manager, heads of units and a Programme Coordinator.*

Benefit: More effective teams and better strategic management.

Voucher schemes for input supply

The field survey found that most beneficiaries had no difficulty in finding commercial sources of seeds, fertiliser etc. for their second and subsequent crops, provided they had the money to buy them. This, and the experience of the “Roots of Peace” project, suggest that conditions exist to supply such inputs through a voucher scheme whereby project beneficiaries would

be given vouchers to buy specified inputs from approved suppliers at a substantial discount, instead of these being purchased and distributed by the project.

Every scheme has some risk of abuse, so this would need to be implemented carefully and fine-tuned until it worked adequately, but it should both reduce the widespread problem of under-delivery by contracted suppliers, and strengthen the development of commercial input supply markets.

Recommendation 9 *Introduce voucher schemes for input supply.*

Benefit: Reducing the under-supply problem and strengthening commercial input supply markets.

Supply of certified saplings

The supply of orchard saplings was a particular problem in 2019, and raises two special issues that do not apply to much to other inputs. Firstly, it is hard or impossible to tell by sight whether saplings are virus-free and of the correct variety, so controls have to be made throughout the growing period. Secondly, there is a substantial lead time, typically two years, for nursery grower to produce new saplings.

Work is being done with the Afghan Nursery Growers' Organisation (ANGO) to establish a certification scheme for saplings, and in theory the different projects could cooperate and advise this organisation of their expected purchase requirements for the next couple of years. If this could be achieved, then the project might be able to extend the voucher system to include saplings as well as simpler inputs.

Recommendation 10 *Work with other projects to help develop the commercial supply of certified saplings, and use a voucher scheme to help beneficiaries buy them.*

Benefit: Increased long-term national capacity to supply high-quality saplings, benefitting both project beneficiaries and "replicator" farmers who follow their example.

More timely procurement

The issue of lengths procurement was raised in the previous evaluation, and it was recommended that the project should allow greater lead time when procurement and delivery time is likely to become an issue, and make greater use of multi-annual "draw down" contracts for the supply of regular items. Since then, the problems have continued and so UNDP is now considering how best to implement draw-down contracts.

Given the widespread problems of quality and quantity that have come to light over the last year, it is important that future contracts should give suppliers a strong incentive to perform well. The exact details will have to be worked out within the framework of UNDP and national procurement rules, but a possible approach could be to sign a contract for several years with defined prices and quality standards and an indicative long-term delivery schedule, but only a firm commitment to the first tranche of inputs. If the supplier performed well, they would automatically be invited to supply the next tranche. If they performed poorly without good external reasons, then UNDP would have the right to cancel that contract and offer it directly to the second-ranked supplier without needing to re-tender.

If the project moved to a voucher scheme for variable inputs and saplings, then this new mechanism would apply mainly to greenhouses.

Recommendation 11 *Introduce multi-annual “draw down” contracts for supply of standard items, with incentives for good performance and simple ways to switch supplier in response to poor performance.*

Benefit: Fewer delays in project implementation, helping the project to get back on track to meet its disbursement targets.

Stronger role for UNDP in implementation

The above recommendations should go a long way to the serious delays and implementation problems that have plagued the project, but it might also be necessary to reconsider the relative roles of UNDP and MAIL in project implementation. In other countries, direct implementation by UNDP would be considered, but the security situation in Afghanistan does not allow UNDP staff to visit the field. UNDP might consider if there are any better ways to manage the project, with tighter control of finance and implementation, that could be made to work in the difficult circumstances of Afghanistan.

Recommendation 12 *Review the respective roles of UNDP and MAIL in project implementation and see if there is another workable approach that would give better results.*

Benefit: Improved project implementation and reduced scope for irregularities.

Communications team and campaign

In 2018, communication was being raised in Project Board meetings as one of the project’s weakest points, and the previous report recommended that the project should recruit a communications expert, prepare a communications strategy and put it into effect

One year later the project has two communications staff in place (albeit with one of them shared across three projects) and a third post waiting to be filled – but still no communications strategy, Counter Narcotics campaign or other visible outputs. The project should either make the communication strategy and campaign happen, or consider deleting this unit and using UNDP expertise for more limited but professional communication of the project results.

Recommendation 13 *Address the lack of progress in communications and consider alternative approaches if the project team cannot deliver.*

Benefit: More cost-effective communication of the project results and key messages.

8.2.3 Allocation of resources

The now-extended project needs to be sure that it is promoting the right interventions and delivering them in ways that maximise the beneficial impact on treatment communities.

Project focus

The project should focus on the core interventions of orchards, greenhouses, irrigation systems and the marketing of orchard and greenhouse crops. It should avoid getting side-tracked into minor interventions and should take every effort to make these core interventions successful. This will involve listening to beneficiaries and responding to their needs, which currently include more training and support in pest and disease control, in orchard management, intercropping and irrigation, and in greenhouse management, irrigation and fertigation. Marketing remains a key need, and one which the new Output 3 should actively support.

Monitoring and reporting should also highlight the core indicators, i.e. the numbers of orchards, greenhouses and irrigation schemes completed, and give these precedence over intermediate outputs, such as the number of tool packages distributed.

Recommendation 14 *Focus project resources on the four core interventions of orchards, greenhouses, irrigation systems and marketing. Concentrate on making these interventions a success, and emphasise them in monitoring and reporting.*

Benefit: More effective use of project resources, and greater impact as the team focusses on making the core interventions a success.

Maximise beneficiaries

In order to maximise positive impact on incomes and poppy reduction, and to avoid a backlash from community members who see no benefit from the project, resources should be allocated to benefit as many people as possible. This requires a focus on orchards, which offer a good return on investment, and on irrigation systems that can benefit the whole community. Greenhouses have a useful role in bringing quick and visible results, but they are relatively expensive and so the same project funds can reach considerably more people by establishing orchards.

It is not recommended at this stage to extend into new areas until a significantly increased share of households in existing target communities are receiving benefits from the project.

In addition to prioritising the most cost-effective interventions, future implementation should:

- supply only new beneficiaries, not households that have already received interventions;
- limit new households to a single intervention, unless the interventions are clearly linked and synergistic (e.g. apple orchards + cold stores; orchards + beehives for pollination; grapes + raisin houses) – if the secondary interventions are to be continued at all;
- limit orchard beneficiaries to one jerib per household;
- consider whether there is scope to increase the level of beneficiary contribution, thus letting the project reach more beneficiaries and narrowing the gap between project-assisted and beneficiary-funded investments;
- see if there is any realistic way to avoid a large share of total support being captured by members of related families.

Recommendation 15 *Adjust the intervention mechanisms so as to reach as many beneficiaries as possible, aiming for considerably more than the current targets of 389 greenhouses and 910 jeribs of orchard.*

Benefit: Benefits extended to more households, including the more marginalised. Reduced risk of backlash against the project and return to poppy cultivation.

8.2.4 Strengthening access to markets

New Output 3 on marketing

Marketing is clearly an issue of concern to beneficiaries, and the new Output 3 is designed to address this need. These activities should be implemented rapidly, and the project should be

ready to make changes quickly if it becomes apparent that some aspects are not working as planned.

Recommendation 16 *Implement Output 3 with vigour and flexibility.*

Benefit: Beneficiaries will be able to sell their outputs and achieve the intended returns.

8.2.5 Strengthening extension

Extension is a key part of the project approach, implemented through Lead Farmers, Common Interest Groups and District Monitoring & Extension Advisors. However, it depends very heavily on the capacity of Lead Farmers with rather limited training, support and experience of extension. The next step should be to develop a more systematic approach and a strong support system for the front-line extension workers. Attention should also be given to how farmers with orchards and greenhouses can continue to get good advice after the project finishes.

The evaluator did not see evidence that the three previous recommendations in this area have yet been implemented, so they are repeated here.

Extension toolkit

So far, Lead Farmers have only been provided with training, and the only equipment given to District Monitoring & Extension Advisors consists of a motorbike and a GPS camera. Neither group can operate efficiently without good resource materials.

The project should start to develop a set of locally adapted leaflets, brochures, posters and videos that can be used by extension workers and distributed through input-supply shops and other community venues. This should be backed by a support system for more difficult problems, for example, letting someone send a photo of pest or disease symptoms to a national expert for diagnosis and advice.

Other projects and experience from similar countries should provide a good starting point and allow a first set of tools to be put together quite quickly.

Recommendation 17 *Develop a toolkit of extension materials to increase the effectiveness of front-line extension workers and for direct dissemination to farmers.*

Benefit: Wider reach, higher quality and more efficient use of extension workers' time.

Sharing lessons learned

The project has aimed to establish mainstream orchards and greenhouses throughout its treatment communities, with a proportion of them also having demonstration units for less common crops and for facilities such as cold stores, raisin houses and compost units. This gives a lot of people the chance to see new technologies for themselves but does not take full advantage of experience gained right across the project area.

The project should aim to share experience across communities, both of best practice and of mistakes to avoid. One part of this should be the economic analyses discussed above, another should be the use of photos, videos and stories to share experiences across the whole project area.

Demonstration plots and structures should have simple information boards showing their establishment costs and the key physical and financial parameters, i.e. the things a farmer needs to know to decide whether or not to adopt a technology demonstrated by the project. These key parameters should be included in the information sharing between communities.

As the project moves into marketing, a similar approach should be applied to analysing and sharing experiences.

Recommendation 18 *Share experience of demonstration plots and regular interventions as widely as possible, with a strong emphasis on the lessons learned.*

Benefit: Farmers will relate more easily to the experience of other farmers, will have reliable information on which to base their decisions, and will be made immediately aware of the critical factors for successful production and marketing of high-value crops.

Extension strategy

The project should develop a strategy to strengthen its extension work and enhance cooperation with MAIL extension staff so that its achievements continue to be used beyond the end of the project. This should include the extension toolkit and sharing of experiences discussed above, but also address training, monitoring and ways in which project extension can interact with the communications campaign to share its messages more widely.

Recommendation 19 *Develop an extension strategy to guide the project's work in this and integrate it more closely with the MAIL extension system.*

Benefit: A more coherent and sustainable extension system that can help to spread the project's successes and continue to support beneficiaries after the project ends.

8.2.6 Looking ahead

Long-term monitoring

The previous report recommended that the project should be extended and that, in order to assess the results of mature orchards and to see the long-term impact on opium production over one or more full market cycles, monitoring should be continued until at 2028, ten years after the first orchards were planted. The project has now been extended until April 2022, and so this recommendation simply repeats the proposal to continue monitoring beyond the end of the main project.

Recommendation 20 *Continue regular monitoring until at least 2028.*

Benefit: Much more reliable testing of the concept of high-value crops as a sustainable alternative to opium poppies over a full market cycle and with hard data on the economic performance of mature orchards.

Understanding the rural economy

One of the most striking findings of the field survey was that 95 % of beneficiaries said that the majority of their household income came from sources other than agriculture. A second key finding was that alternative income sources offer the main long-term mechanism to move households out of poppy production. Together, these findings suggest that developing non-agricultural income sources for rural households can play a major role in both economic development and opium reduction – but that first we need a much better understanding of the rural economy and of rural-urban linkages in Afghanistan. UNDP might discuss with partner organisations how such a study might be funded and implemented, and then stimulate a broad debate on how its findings should shape future project design.

Recommendation 21 *Study the overall rural economy and use the findings to shape the design of future projects for economic development and poppy reduction.*

Benefit: Ability to design future projects with a wider impact on rural livelihoods and poppy reduction.

8.3 Implementation of previous recommendations

The following pages present the table of “Recommendations and management response” prepared by UNDP in response to the Mid-term Evaluation of the CBARD-West project in late 2018/early 2019. The final column, “Status”, repeats the status as originally given in April 2019 and adds a judgement of the current status in January 2020.

Over the last year, UNDP, INL and the project management have taken a number of important strategic decisions to implement the recommendations. The project has been extended, its organigram restructured, and several new staff posts created. The Results Framework has been revised, and monitoring and reporting improved. The project has also analysed various interventions in terms of their economic efficiency and likely impact on poppy production, and decided to discontinue those that offer little prospect of cost-effective impact. It has also carefully considered various suggestions on agricultural inputs and finance, and taken pragmatic decisions about what is really likely to work. A new Output 3 on marketing has been added to address this important area.

Economic analysis has been extended to several new areas, though there is still further work to be done, such as in the analysis of irrigation projects. The project is also actively seeking ways to improve the procurement process, to address both the delays highlighted in the previous report and the financial irregularities highlighted in this one.

Implementation has been rather slower in the more technically-demanding areas, such as detailed data collection and database design. There is also a lot more work to be done in strengthening and systematising the important extension component of the project.

Midterm Review recommendation 1. Monitoring: For the project to make good management decisions and provide sound advice to farmers, it needs a reliable information base. The recommendations in this section will help to develop that information base and feed into the economic analyses as well as develop monitoring information on project activities and deliverables.				
Management response: The project acknowledges the need to update the monitoring systems and agree to implement the below recommendations. The project has been working on an M&E toolkit which will be updated to include the recommendations below.				
Key action(s)	Time frame	Responsible unit(s)	Tracking ⁴⁷	
			Comments	Status ⁴⁸ (2019) 2020
1.1. Project database: Convert the existing spreadsheet records into a structured relational database and ensure that future data are properly checked and coded before import.	30 September 2019	CBARD Project	Project to hire external resources if required, Request for assigning two developers from MAIL MIS sent to DM and after approval sent to MAIL MIS.	(Ongoing) Not yet implemented.
1.2. Data exchange with UNODC: Arrange procedures for regular transfer of relevant data from UNODC databases to the project database*	30 June 2019	UNODC to share with CBARD project	Initial meeting conducted with UNODC, and due to confidentiality of UNODC data, they are working to create a system for sharing information with project.	(Ongoing) All data received in pdf format, though not yet in an Excel format more suited to analysis.
1.3. From output to impact: Consider how overall project impact will be calculated, ensure that the necessary indicators are collected, and give greater prominence to indicators that strongly influence household income	30 September 2019	CBARD Project with UNDP Support	Revise the M&E Toolkit and formats including some methodological development centered around analyzing farm-level and community-level impacts	(Ongoing) Analysis of farm- & community-level impacts begun.
1.4. Results Framework: Review and synchronize the targets in the Results Framework and create standard database reports to give regular status updates.	30 June 2019	CBARD Project with UNDP Support	The Results Frameworks is already updated but the database reports need to be updated	(Ongoing) Results framework improved and standard quarterly reporting table developed.

⁴⁷ If the MTR is uploaded to the ERC, the status of implementation is tracked electronically in the Evaluation Resource Centre database (ERC).

⁴⁸ Status of Implementation: Completed, Partially Completed, Pending.

<p>1.5. Gross Margins Survey: Supplement the “APY” survey with sample-based collection of cost data to produce full gross margins for each high-value crop, including orchard inter-crops</p>	<p>30 June 2019</p>	<p>CBARD Project with UNDP Support</p>	<p>Update the M&E Toolkit and update the forms for APY including ability to collect farm level production costs; Make sure that business development training are provided to farmers so they can record all income/expenses data;</p>	<p>(Ongoing) Cost data not yet being collected, though the forms have been prepared.</p>
<p>1.6. Record-keeping for demonstration activities and irrigation projects: Keep records for a representative sample of irrigation project and demonstration activities so that costs and benefits can be calculated.</p>	<p>30 September 2019</p>	<p>CBARD Project</p>	<p>Update the M&E Toolkit and forms to be developed; Train project staff on what, how, when to collect; Conduct financial analysis based on the collected data.</p>	<p>(Ongoing) Not yet implemented.</p>
<p>1.7. Analysis of other alternative livelihood projects in agriculture: Consider analyzing similar interventions under other projects, such as the World Bank-funded NHLP, to determine their long-term effect on opium growing*</p>	<p>30 June 2019</p>	<p>UNDP</p>	<p>UNDP to share the recommendation with donor depending on availability of NHLP baseline data; Reduction of opium is not the mandate of mentioned projects, however, meetings are in progress with their technical teams to determine the overall impact of similar interventions.</p>	<p>(Ongoing) Recommendation discussed with other projects.</p>

Midterm Review recommendation 2. Economic Analysis: The project needs to be sure that it is promoting the right interventions, and its extension staff need good information to help persuade and advise farmers. These recommendations for economic analysis will help transform the monitoring data from the previous section into actionable conclusions.				
Management response: The project acknowledges and agrees to further extend the economic analysis to be based more on actual data coming from monitoring of project activities and areas.				
Key action(s)	Time frame	Responsible unit(s)	Tracking	
			Comments	Status
2.1. Further analysis of high-value crop margins: Update and extend the analysis of high-value crop margins using data from project monitoring.	30 June 2019	CBARD Project with UNDP Support	Proposed changes to the APY database to include orchard and intercrop production and farm-level production costs will allow calculation of actual gross margins; Conduct financial analysis and develop a format which can be used for future analysis;	(Ongoing) Not yet implemented, though the forms have been prepared.
2.2. Economic analysis of other project interventions: Conduct standard financial and economic analysis of all project interventions before promoting them widely*	30 June 2019	CBARD Project with UNDP Support	Financial and economic analyses of estimated returns to (a) zero-energy cold chambers; (b) raisin houses; (c) compost (basic and vermiculture); and (d) women-focused interventions (kitchen gardens, processing and beehives ⁴⁹) completed. APY database will require further amendment to include data needed to calculate actual financial and economic returns (see 2 above).	(Ongoing) Analysis completed for cold stores, raisin houses & compost units; not yet included in APY database.
2.3. Economic modelling for farms and villages: Combine the gross margin budgets into economic models to show the impact of the project on whole farms and villages, considering also their other crops	31 December 2019	CBARD Project with UNDP Support	Develop farm models based on gross margin analysis; Develop (or use existing) beneficiary questionnaire to monitor and record non-project and project income/production;	(Ongoing) Ongoing.

⁴⁹ Gross margins for micro greenhouses have already been estimated.

Midterm Review recommendation 3. Round Two: As the project moves into its third operational year and launches its second big round of interventions, it needs to be sure that it is promoting the right interventions and delivering them in ways that maximize the beneficial impact on treatment communities				
Management response: The project acknowledges and agrees to extend the number of beneficiaries within the budget. The project has been working to deliver in tranches of beneficiaries. The ones that already have received interventions, will not be targeted again.				
Key action(s)	Time frame	Responsible unit(s)	Tracking	
			Comments	Status
3.1. Intervention priorities: Focus Round Two on crops and structures that give a high return on project funds and can cover large areas of land or numbers of people	30 June 2019	CBARD Project with UNDP Support	Conduct economic analysis of crops to determine returns on land and return on investment to select the most profitable crops;	(Ongoing) ???
3.2. Interventions for Women: Check the economic profitability of female-focused interventions as soon as possible, and implement the profitable ones on a considerably wider scale	30 September 2019	CBARD Project with UNDP Support	Financial and economic analysis of women-focused interventions (kitchen gardens, processing and beehives) almost complete. Gross margins for micro greenhouses have already been estimated.	(Ongoing) Project will discontinue minor interventions.
3.3. Cost-effective solutions: Seek alternative designs for cold stores, raisin houses, compost units and irrigation structures than can be replicated by beneficiaries at minimal cost	30 September 2019	CBARD Project with UNDP Support	Financial analyses of estimated returns to (a) zero-energy cold chambers; (b) raisin houses; and (c) compost (basic and vermiculture) completed. Based on the financial analysis, rework the designs to be most profitable and economic. Project to bring more engineering expertise for designing if needed.	(Ongoing) Economic analysis completed; lower-cost designs under development.
3.4. Maximize beneficiaries: Adjust the intervention mechanisms for Round Two so as to reach as many beneficiaries as possible, aiming for more than the original target of 2,100	28 February 2019	CBARD with support of UNDP	The project has discussed this with UNODC and project board and is possible up to the level budget allows.	(Completed)

Midterm Review recommendation 4. Strengthening access to markets and finance: Access to finance remains one of the unsolved challenges of the project. It is clear that beneficiaries want finance, but equally clear that the normal finance and micro-finance organizations simply do not yet exist in rural areas.

On marketing, it appears that output markets work better than expected, returning a higher-than-usual share of final value to the farmer, but that input supply markets are under-developed and inefficient, perhaps linked to the relatively low use of inputs on low-value crops.

Management response: The project acknowledges the need for establishing the access to markets and finance. In fact, access to finance was part of the project but it couldn't be established due to remote locations. Having said that, the project can see the feasibility of input supplies which good results didn't have up to now, but project can work with farmers to increase the demand and link with businesses-men. On marketing, the project is revising marketing strategy which is more focused on international markets.

Key action(s)	Time frame	Responsible unit(s)	Tracking	
			Comments	Status
4.1. Input supply shops: Consider and possibly pilot local input supply shops as part of the project's support to community-based input supply infrastructure, with these also serving as contact points for information and advice	31 December 2020	CBARD with support of UNDP	The input supply shops are tried and tested many times by MAIL and USAID projects but failed. Therefore, the project will not work on establishment but rather will review ways to work as facilitator to bring private sector suppliers and farmers together. In order to do this, project may seek to determine the demand in project areas and link with businesses who can meet the demand.	(Ongoing) Reviewed and discussed with other donors. Experience was not successful so this will not be repeated by CBARD.
4.2. Working credit linked to input supply: Consider the possibility of extending trade credit through the new input-supply shops, if established*	31 December 2020	CBARD with support of UNDP	This is strategic recommendation and will be dependent on previous recommendation. There are contract farming possibilities given the traders can be attracted in the area. This can also be linked with CBARD marketing approach. However, it might be infeasible to establish.	(Pending) Reviewed and discussed with other donors. Considered not feasible in current conditions.

Midterm Review Recommendation 5: Strengthening Extension: Extension is a key part of the project approach, implemented through Lead Farmers, Common Interest Groups and District Monitoring & Extension Advisors. However, it depends very heavily on the capacity of Lead Farmers with rather limited training, support and experience of extension. The next step should be to develop a more systematic approach and a strong support system for the front-line extension workers. Attention should also be given to how farmers with orchards and greenhouses can continue to get good advice after the project finishes.

Management response: The project acknowledges and agrees with need for strengthening extension. The project can bring specific capacities to work on this with the project.

Key action(s)	Time frame	Responsible unit(s)	Tracking	
			Comments	Status
5.1. Extension Toolkit: Develop a toolkit of extension materials to increase the effectiveness of front-line extension workers and for direct dissemination to farmers	30 June 2020	CBARD with support of UNDP	Project to bring external resources who can look into project and MAIL extension structures, rework the extension toolkit, and work on project exit strategy in terms of extension after project.	(Pending) Not yet implemented.
5.2. Sharing lessons learned: Share experience of demonstration plots and regular interventions as widely as possible, with a strong emphasis on the lessons learned	30 June 2020	CBARD with support of UNDP	Project to bring external resources who can look into project and MAIL extension structures, rework the extension toolkit, and work on project exit strategy in terms of extension after project.	(Pending) Not yet implemented.
5.3. Extension strategy: Develop an extension strategy to guide the project's work in this and integrate it more closely with the MAIL extension system	30 June 2020	CBARD with support of UNDP	Project to bring external resources who can look into project and MAIL extension structures, rework the extension toolkit, establish stronger linkages with MAIL extension provision and work on project exit strategy in terms of extension after project.	(Pending) Not yet implemented.

Midterm Review Recommendation 6: Project Management: The following recommendations are given for improving the project management in the project.				
Management response: The project recognizes the need for improved project management and a revised project organigram has been drafted. The revised organigram, which is based on these recommendations, will be presented to the next board meeting for approval.				
Key action(s)	Time frame	Responsible unit(s)	Tracking	
			Comments	Status
6.1. Strengthening vertical teams and delegation: Develop vertical teams to increase delegation, strengthen cooperation between staff working on similar issues, and improve management efficiency. Consider appointing a Deputy Project Manager	30 June 2019	Project and UNDP to prepare and approved by Project Board	A revised organigram of the project is developed. It will be presented to MAIL, INL and Project Board	(Ongoing) New units created; new posts created for unit heads and Deputy Project Manager.
6.2. More timely procurement: Allow greater lead time for procurement and delivery when time is limited, and make greater use of multi-annual “draw down” contracts for supply of standard items	31 December 2019	Project and UNDP	The project is developing two-year work plans for more timely procurement. Possibility of bulk contracting and long-term contracting are to be discussed with MAIL.	(Ongoing) Under development.
6.3. Communications expert and campaign: Recruit a communications expert, prepare a communications strategy and put it into effect.	31 September 2019	UNDP	A TOR for the expert has been drafted, and expert will be hired.	(Ongoing) Communications expert recruited & additional post added; strategy not yet developed.

Midterm Review Recommendation 7: Looking Ahead: The following recommendations are given for the remainder of the project				
Management response: The project will implement the recommendations up to possible level. Main recommendation is at strategic level aimed for government/donor which is out of project scope.				
Key action(s)	Time frame	Responsible unit(s)	Tracking	
			Comments	Status
7.1. Project Duration: Consider extending the project until the end of 2021, continuing regular monitoring until at least 2028, and ensuring advisory work continues after the project ends*	30 June 2019	INL and Project Board	Extension till end of 2021 is agreed in principle and hope to finalize it by 30 June 2019. The second part of recommendation is for INL and government. Project will communicate this to donor and government.	(Pending) Projects extended to April 2022.
7.2. Testing the scope for scaling-up: Focus some resources on a limited area to discover whether and how large volumes of high-value crops can be marketed	31 December 2019	CBARD with support of UNDP	To be addressed in the marketing support (under development).	(Ongoing) To be addressed under new Output 3.

9 Annexes

Annex 1. TOR for Mid-term Evaluation

Attached as “Annex 1 – ToR for MTE.docx”

Annex 2. Description of project interventions

Attached as “Annex 2 – Interventions.docx”

Annex 3. Studies commissioned by CBARD

Attached as “Annex 3 – CBARD studies.docx”

Annex 4. Evaluation methodology and timetable

Evaluation timetable

The evaluation timetable is presented below. Essentially, it comprised:

- Desk study from 27th to 31st November 2019, resulting in the Evaluation Inception Report submitted on 23rd December.
- A mission to Kabul from 31st October to 20th November, during which the meetings listed in **Error! Reference source not found.** took place, with a field trip to Nangarhar from 12th to 14th November.
- An End-of-Mission Report presentation to UNDP and INL of 19th November.
- Survey fieldwork from 24th November to 8th December, followed by data entry up to 12th December.
- Detailed analysis and reporting, including analysis of the survey data, supported by Skype interviews and exchange of e-mails, until **XXX** 2020 when this draft report was submitted.

Date	Place	Activity
27 Oct 2019	-	Contract signed
29 Nov – 7 Dec	Belgrade	Initial review of documents & data, continued throughout the project (see Annex 8: <i>References</i>). Skype meetings with project team.
31 Oct	-	Evaluation Inception Report submitted to UNDP.
31 Oct – 1 Nov	BEG-DXB-KBL	Travel to Kabul.
2-11 Nov	Kabul	Meetings & analysis (see Error! Reference source not found.: Error! Reference source not found.).
12 Nov	KBL-NGR	Travel to Nangarhar.
13 Nov	Nangarhar	Meetings with PAIL, project team, agriculture working group, CBARD beneficiaries.
14 Nov	NGR-KBL	Return travel to Kabul.
14-19 Nov	Kabul	Meetings & analysis (see Error! Reference source not found.: Error! Reference source not found.).
15 Nov	Kabul	Revised and final version of Evaluation Inception Report submitted to UNDP.
19 Nov	-	End-of-Mission Report presentations made to UNDP & INL.
19 – 20 Nov	KBL-DXB-BEG	Return travel to Belgrade
21 Nov onwards	Belgrade	Analysis & reporting;

Date	Place	Activity
		Skype meetings with project team, technical advisor and survey consultant.
24 Nov – 8 Dec	Nangarhar province	Survey fieldwork.
12 Dec	-	Full survey dataset received (with minor corrections & clarifications during subsequent analysis).
	-	Draft Mid-Term Evaluation Report submitted to UNDP.
	-	Written comments received from the Programme Analyst, INL and the project team.
	-	Final Mid-Term Evaluation Report submitted to UNDP.

Evaluation questions

The evaluation systematically addresses the 34 specific questions set out in the Terms of Reference and listed in the box below⁵⁰:

Evaluation Questions

Relevance

- 1) Is the project design appropriate to address the substantive problem that the project is intended to address? How useful are the project outputs to the needs of the target beneficiaries?
- 2) What is the value of intervention in relation to the national and international partners' policies and priorities (including SDG, UNDAF and UNDP Corporate Strategic Plan; ANPDF/NPPs, UNHCR regional strategy, etc.)?
- 3) Are the project objectives consistent with substantive needs and realistic in consideration of technical capacity, resources and time available?

Efficiency

- 4) How well is the project managed, and how could it be managed better?
- 5) What is the project status with respect to target outputs in terms of quality and timeliness?
- 6) What is the potential that the project will successfully achieve the desired outcomes?
- 7) To what extent were project start-up activities completed on schedule?
- 8) If there were delays in project start-up, what were the causes of delay, and what was the effectiveness of corrective measures undertaken? Do start-up problems persist?
- 9) To what extent were adequate resources secured prior to project implementation? Did the project use the resources in the most economical manner to achieve its objectives?
- 10) Is there an appropriate mechanism for monitoring the progress of the project? If yes, is there adequate usage of results/data for programming and decision making?
- 11) What are the potential challenges/risks that may prevent the project from producing the intended results?

⁵⁰ The Terms of Reference included a 30th question under the heading of "Coverage": *30) Have vulnerable families been reached, including those with girls, children with disabilities, and low-income families?* The evaluator was advised that this question was not relevant as the project design did not target or monitor these groups.

Effectiveness

- 12) Are the project's objectives and outcomes clearly articulated, feasible, realistic?
- 13) To what extent is the project logic, concept and approach appropriate and relevant to achieving the objectives?
- 14) Are the underlying assumptions on which the project intervention has been based valid? Is there a clear and relevant Theory of Change?
- 15) To what extent has the project managed to implement activities across the target project locations?
- 16) To what extent has the project implemented activities as envisaged? To what extent have those activities contributed to achieving the project objectives?
- 17) To what extent did the project start-up activities adhere to the agreed approach and methodology?
- 18) To what extent have the project implementation modalities been appropriate to achieve the overall objectives?
- 19) What factors have contributed to achieving/not achieving the intended results?
- 20) To what extent do external factors, such as logistical or security constraints, have impacts on project implementation?

Perception and Impact

- 21) What is the wider perception of the project, its image, applicability and performance? Are project communications effective in positively promoting the project to a wider audience?
- 22) What are the results (or preliminary results) of the intervention in terms of changes in the lives of beneficiaries against set indicators?

Sustainability

- 23) What are the Implementing Partner's resources, motivation and ability to continue implementing activities until the end of the project?
- 24) Is there adequate all-party commitment to the project objectives and chosen approach?
- 25) To what extent is there constructive cooperation among the project partners? What are the levels of satisfaction of government counterparts, donors and beneficiaries?
- 26) What has been the quality of implementation of the implementing partner, and if applicable where are there specific areas for improvement?
- 27) What is the likelihood that the project results will be sustainable in terms of systems, institutions, financing and anticipated impact?
- 28) What is needed for the project intervention to be adapted/replicated further?

Coverage

29) Which groups have been reached and what is the different impact on those groups?

Coordination

30) What are the effects of coordination or lack thereof at district/province/ national level?

Coherence

31) What are areas and ways of cooperation with other UN and donor agencies in regard to set goals and objectives?

32) What is the existing national policy on agriculture and rural development?

33) Is there coherence across policies of different donor agencies and national stakeholders? (this criteria should be assessed to the extent possible)

Protection

34) Is the response adequate in terms of protection of children of different groups? (this criterion should be assessed in regard to what measures/actions need to be taken to provide, for example, support systems for children with disabilities, as/where applicable.)

Annex 5. Market analysis of high-value crops and opium

Repeated from the previous mid-term evaluation of CBARD-West.

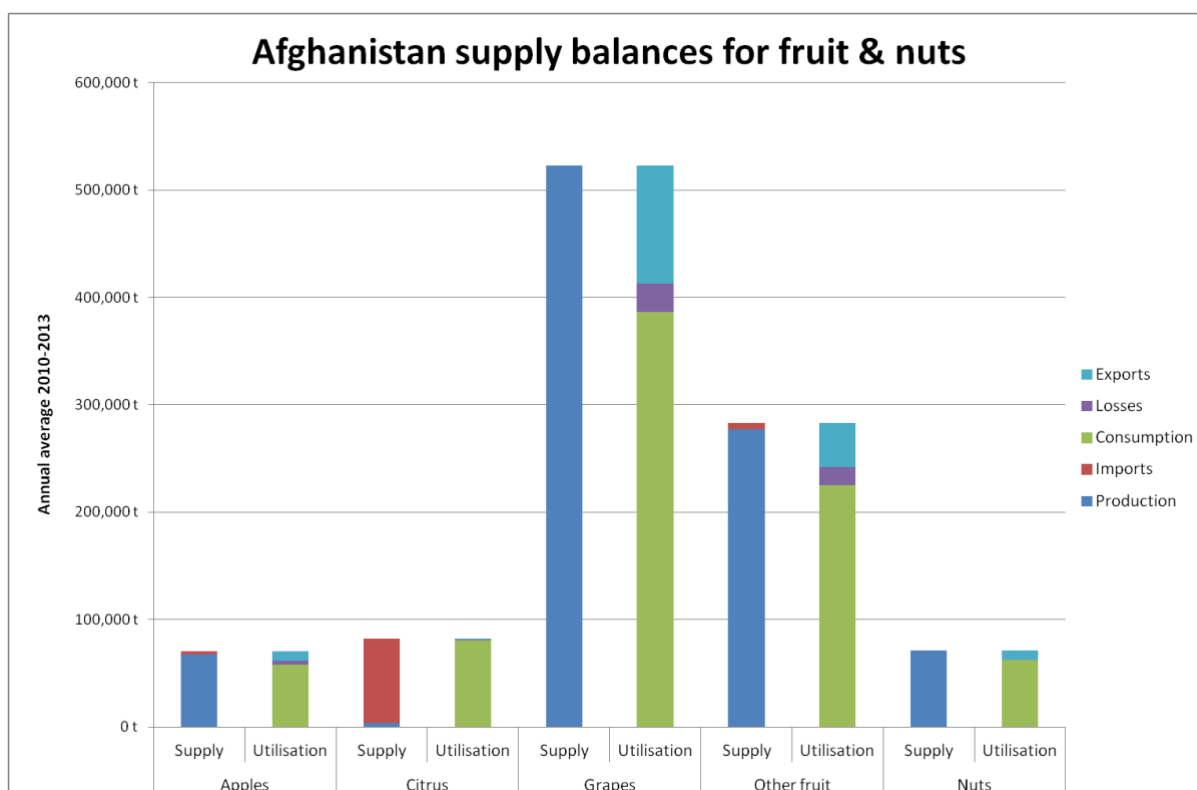
The viability of high-value crops as a sustainable alternative to poppy cultivation is highly dependent on the market for high-value crops and the market for opium. Two questions are particularly relevant to sustainability:

- Q 3. *Can markets absorb the extra high-value produce generated by project interventions?*
- Q 4. *Will high-value crops still be competitive if opium prices return to their former high level?*

This annex examines the two product markets to help answer these questions.

a. Production, consumption & trade of high value crops

The following chart presents FAOSTAT data for production, consumption, imports, exports and losses of relevant fruit and nut categories, showing annual averages for the 4-year period 2010-13. The category “Other fruit” includes peaches, plums, persimmons and pomegranates, as well as other fruit not supported under either CBARD project; “Nuts” includes all nuts, not just pistachios. The FAOSTAT database does not distinguish greenhouse vegetables, appears to be missing data for tomatoes, and includes cucumbers in the large category of “Other vegetables”, so vegetable data are not included. The data table is presented after the graph.



Source: <http://www.fao.org/faostat>

Item; Trade flow	Production	Imports	Consumption	Losses	Exports
Apples					
Supply	67,622 t	3,213 t			
Utilisation			58,076 t	3,542 t	9,217 t
Citrus					
Supply	3,665 t	78,417 t			
Utilisation			80,643 t	770 t	669 t
Grapes					
Supply	522,525 t				
Utilisation			386,560 t	26,126 t	109,839 t
Other fruit					
Supply	276,912 t	6,175 t			
Utilisation			225,237 t	16,569 t	41,448 t
Nuts					
Supply	71,301 t				
Utilisation			62,793 t		8,517 t

Source: <http://www.fao.org/faostat>

Apples

Total supply averages just over 70,000 tonnes, with 95 % produced domestically (68,000 t) and 5 % imported (3,000 t). Consumption account for 82 %, losses 5 % and exports 13 % (9,000 t). Overall, Afghanistan is a small net exporter, with imports probably occurring once domestic supplies have been used up towards the end of the marketing year.

Projected annual output from both CBARD projects is 4,700 t by 2031, representing a modest 7 % increase in national production.

Increased domestic supply could lead to higher domestic consumption (normally associated with lower prices), reduced imports or increased exports, largely depending whether it was marketed shortly after harvest or stored until supplies run short.

Citrus

Almost 95 % of citrus supplies are imported, with a small domestic production of less than 4,000 tonnes and no significant exports.

Projected annual output from both CBARD projects is 2,400 t by 2031, representing a very significant 65 % increase in national production but less than 3 % of consumption.

Increased domestic supply should mainly serve to substitute for imports.

Grapes

The graph shows grapes and grape products, including raisins. Grapes are the most important fruit by far, in terms of volume, with over 520,000 tonnes produced annually and no imports. Exports of almost 110,000 tonnes account for 21 % of total supply.

Projected annual output from both CBARD projects is 4,600 t by 2031, representing a rather insignificant 0.9 % increase in national production.

Increased domestic supply should be aimed at export, either fresh or (more probably) as raisins.

Other fruit

This category is too diverse to analyse with confidence. Total annual production is over 275,000 tonnes, with a further 2 % imported. Exports account for 15 % of overall usage, but these data do not show which specific fruits are being exported.

Projected annual output from both CBARD projects is 13,300 t by 2031, representing a 5 % increase in national production.

Nuts

Annual nut production of 71,000 tonnes is almost equal to that of apples, but will have considerably greater value due to the higher price of nuts. Exports account for 12 % and probably consist mainly of pistachios.

Projected annual output from both CBARD projects is 330 t by 2031, representing a 0.5 % increase in total national production.

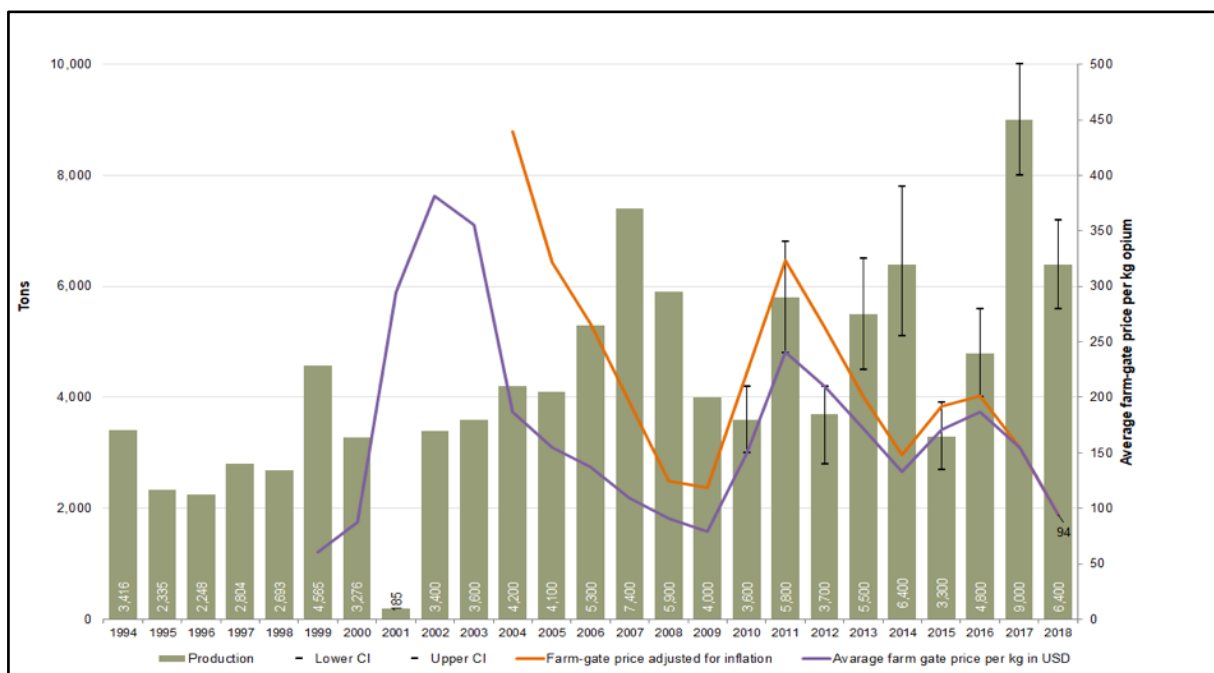
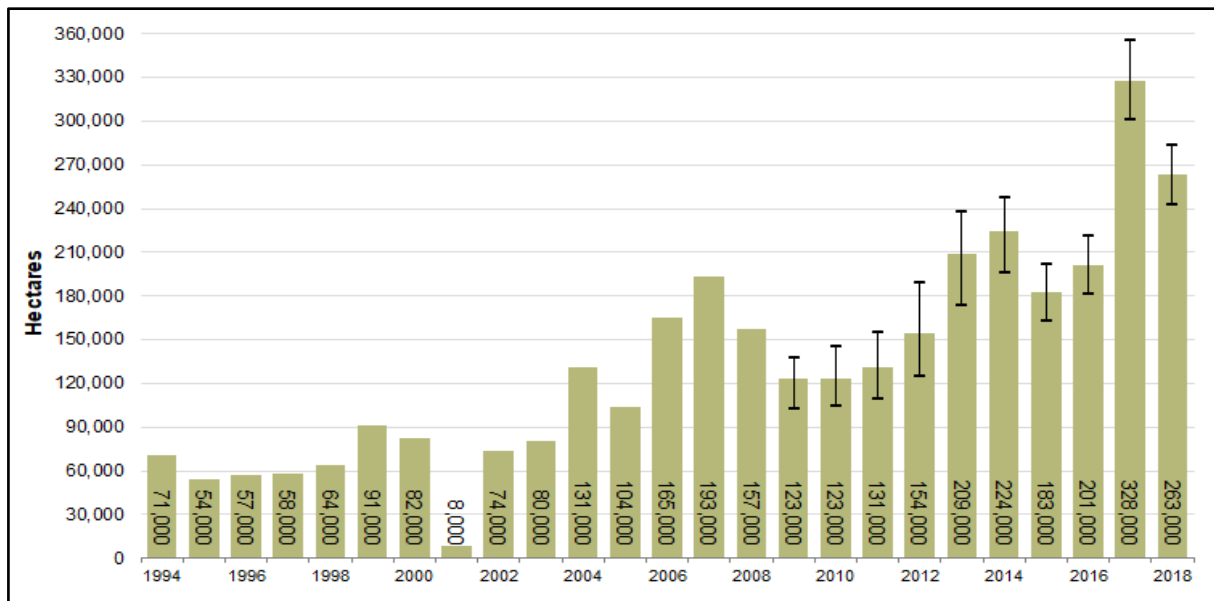
Increased production of pistachio nuts should lead to higher exports; where there should be little difficulty in marketing the modest extra output projected.

b. Opium production and market

The opium poppy sector in Afghanistan shows many of the characteristics of other crop sectors, with linkages between price, area, yield and production. Understanding these linkages is important for predicting how various narcotics control strategies, including promotion of alternative crops, are likely to affect the opium market.

Price and production

Price and production influence each other: a high price induces farmers to use more land for opium poppies, the resultant increase in opium production drives down the price, leading farmers to reduce their production two or three years later in a classic commodity cycle:

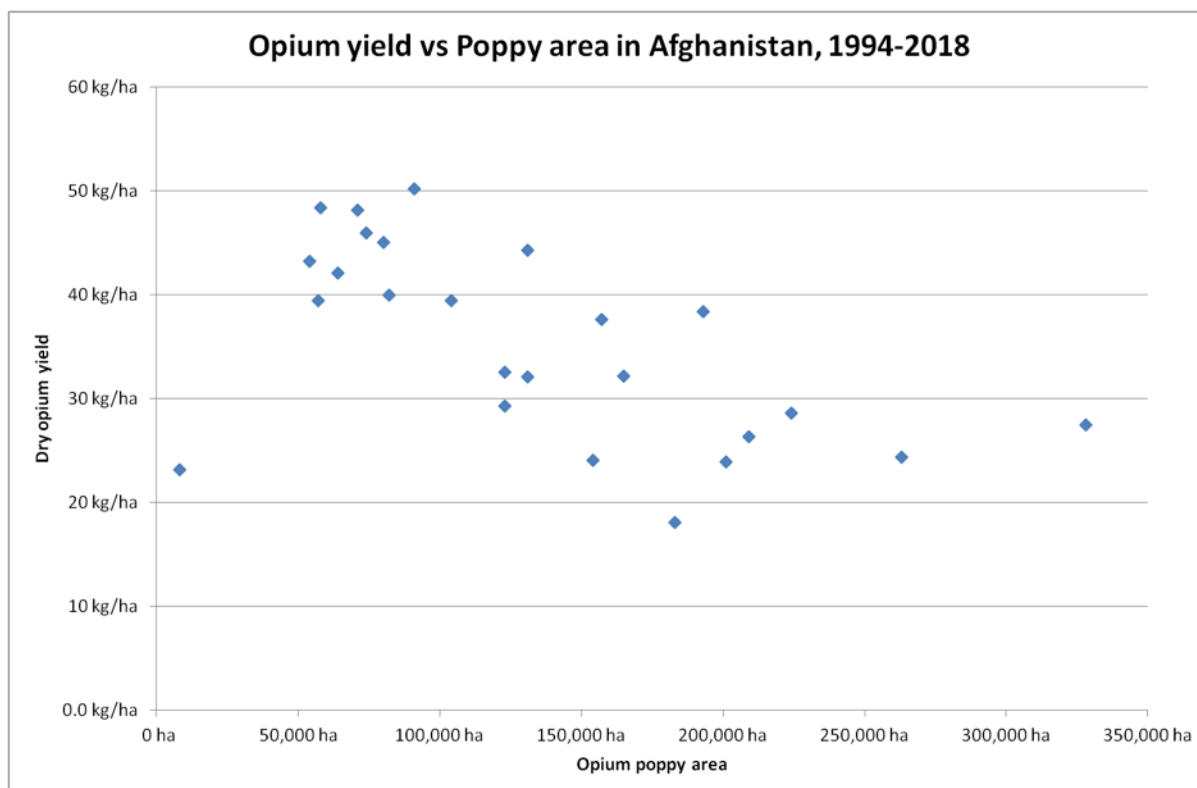


Source: UNODC Afghanistan Opium Survey 2018, Key Findings report

This suggests that, over the next few years, the poppy area may decline towards 200,000 ha and the opium price rise above \$ 200/kg.

Yield versus area

The “Key Findings” report from the UNODC Afghanistan Opium Survey 2018 includes graphs showing annual area and production from 1994 to 2018. The following chart shows the relationship between area and yield over this period:



Source: Data from UNODC Afghanistan Opium Survey 2018, Key Findings report

In the years when the poppy area is below 100,000 ha the yield is relatively high, at around 43 kg/ha (slightly less than 9 kg/jerib). As the area increases to 100-200,000 ha it appears that poppy cultivation has been extended onto less suitable land, perhaps rainfed areas or *dasht* land with limited irrigation, and the average yield drops to 33 kg/ha (just under 7 kg/jerib). When the area exceeds 200,000 ha, as it has in five of the last six years, the average yield drops to 26 kg/ha (just over 5 kg/jerib).

In the absence of any significant interventions by government or donors, the next few years are likely to see a reduction in the poppy area as farmers respond to the current low price of opium. Most of the reduction is likely to occur on the more marginal land, so the average yield will rise.

If there were a major switch from opium poppies to high-value crops, this substitution would occur almost entirely on good land with irrigation, and so the reduction in poppy area would probably *not* lead to a significant increase in average opium yield.

Scenarios for comparison

In comparing the gross margins of high-value crops with those of opium production (see section 3.2.1 above), four different scenarios are considered:

- High area (> 200,000 ha), low price (**\$ 100/kg**), low yield (5 kg/jerib)
- Medium area (1-200,000 ha), medium price (**\$ 200/kg**), medium yield (7 kg/jerib)
- Low area (< 100,000 ha), high price (**\$ 300/kg**), high yield (9 kg/jerib)
- Low area (< 100,000 ha), very high price (**\$ 400/kg**), high yield (9 kg/jerib)

The fourth scenario, with prices of \$ 400/kg or higher in current terms, has not been seen since 2004 but must be considered as a possibility if the poppy area fell dramatically.

Annex 6. Gross margins of high-value crops and opium poppies

In order to test the “viability of high-value agricultural-based interventions in improving local economies in Farah and Badghis” it is necessary to have some measure of their economic effect. The most appropriate measure at the level of the farm household is the “Gross Margin”: the income from a crop minus the direct costs of seed, saplings, fertiliser etc. At final evaluation, the change in Gross Margin from all the beneficiary households can be summed to calculate the aggregate effect at province or project level.

At this early stage in the project, none of the new orchards is yet bearing fruit and there is only one year of data for the first greenhouses. It is thus too early to measure the viability of the high-value crops, but the project has worked with local experts to produce typical budgets for the lifetime of each investment and thereby to estimate the gross margin that the farmer will receive. These Gross Margins consider the full cost of the investment and would therefore apply to “replicators” establishing high-value crops with their own money, rather than to beneficiaries who received a grant-in-kind from the project.

Gross Margins

Orchards have an initial planting cost followed by an establishment period when yields gradually build up, but for all orchard types except pistachios the farmer is able to grow an intercrop of vegetables or forage in the early years. Greenhouses have a high initial cost and require replacement of the plastic every three or four years. The following chart takes account of these cash flows by showing an average or “annualised” gross margin over 15 years for a farmer using hired labour for the main operations⁵¹; it covers all the main high-value crops included in the project, plus opium poppies at four different levels of price and yield⁵², together with irrigated wheat as a comparison low-value crop; the values are for one typical unit supplied by the project (i.e. one greenhouse or one jerib of orchard⁵³) and for one jerib of poppies or wheat:

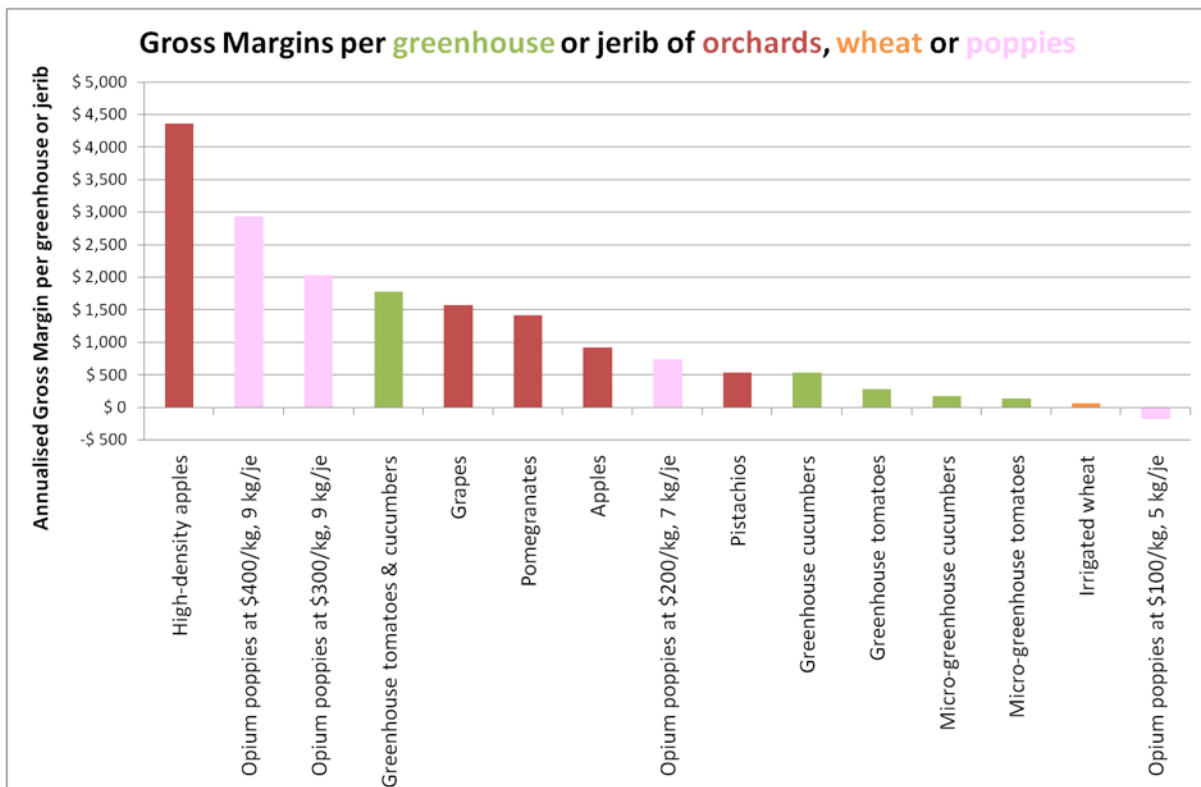
⁵¹ The Gross Margin is calculated as total Revenue (annual crop or high-value crop plus intercrop where applicable) minus the Variable Costs of seed, fertiliser, pesticide and hired labour; also subtracted are the costs of saplings, supports, greenhouses and replacement plastic, which are often treated as Fixed Costs. It might therefore be better described as a “Partial Net Margin”.

All costs and revenues are based on estimates by the Chief Technical Advisor, with standardised values for labour and fertiliser costs and an updated exchange rate of \$ 1 = 75 Afs.

The usual way to compare multi-year investments with irregular cash flows is to calculate the Net Present Value (NPV). However, this is difficult to compare with the Gross Margins that farmers and advisors are used to seeing for annual crops, so in this case the NPV has been calculated and then expressed as the constant annual sum that would have the same NPV over 15 years. With a discount rate of 10 % and a period of 15 years, the annualised equivalent is equal to the NPV \times 0.120.

⁵² The rationale for using different yields is set out in section 0; it applies when considering the possible national response across varying types of land, but is less relevant for changes within a given community.

⁵³ There is no particular reason to compare a greenhouse against one jerib of orchard except that this is the size used by the project. If greenhouse margins are expressed per jerib, then they clearly out-perform all of the orchard crops – but at a capital cost of almost \$ 70,000/jerib that is out of reach for the large majority of farmers.



Source: Based on Gross Margin budgets prepared by the project in 2018

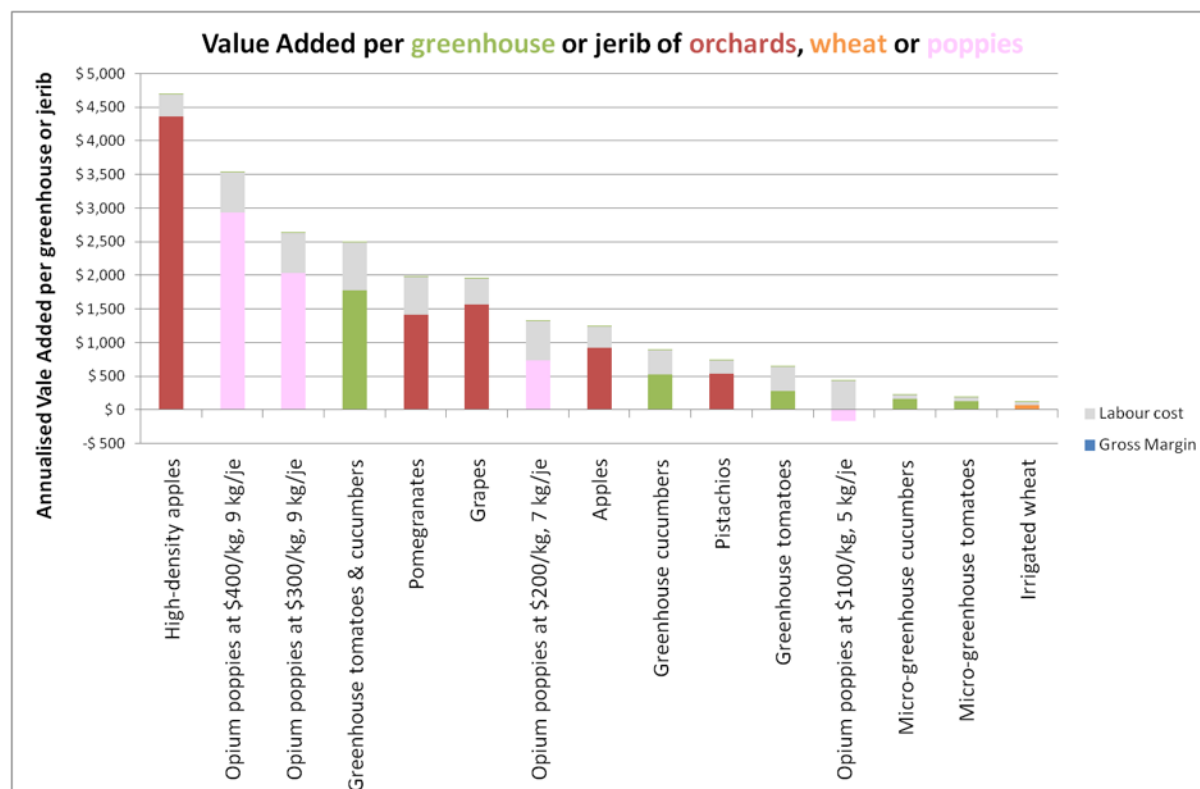
At the current low opium price of around \$ 100/kg, poppies appear to be loss-making and are out-performed by all other crops, including wheat.

At an opium price of \$ 200/kg, the average for the current decade, all of the orchard crops except pistachios offer a better return than poppies. However, a jerib of poppies still brings a higher return than a greenhouse bought by the farmer; the only exception is where the greenhouse grower can get two crops per year, in which case the return is more than double that of a jerib of poppies.

Once the opium price gets to \$ 300/kg, poppies appear more attractive than all of the high-value crops except for high-density orchards.

Value Added

The Gross Margins were calculated after subtracting the cost of hired labour for major operations. However, many households rely on family labour and choose their cropping mix according to what they can manage; for them, the labour cost is all part of the household income. To represent the situation of these families, the following chart shows the same crops ranked by “Added Value”, i.e. Gross Margin plus labour cost:



Source: Based on Gross Margin budgets prepared by the project in 2018

Here the coloured bars represent the Gross Margins exactly as in the previous chart, with the grey bars stacked on top showing the labour cost; thus the combined height of the bars represents the Value Added⁵⁴. Whilst Gross Margin gives the best indication of the likely response of farmers who rely on hired labour, Value Added is a better predictor for households using family labour, as well as showing the total return to the community including landless workers⁵⁵.

The first thing that emerges here is that opium poppies are a high-labour crop. For a family using its own labour, poppies are still quite profitable at a low opium price of \$ 100/kg, generating a margin more than twice that of wheat. This may explain why Afghan farmers grew more than 200,000 ha of opium poppies in 2018 despite its apparently negative Gross Margin.

⁵⁴ In the one instance of a negative Gross Margin (poppies with opium at \$ 100/kg) the labour bar should be read as starting below the axis, at the bottom of the Gross Margin bar. The overall height still indicates the Added Value.

⁵⁵ In some cases, farmers may bring in cheap hired labour from outside their village but farm work, including opium production, is probably an essential source of income for landless and marginalised community members.

At an opium price of \$ 200/kg, poppies rank in the middle of the conventional orchards and better than any of the greenhouses growing one crop per year.

Once the opium price reaches \$ 300/kg, then poppies again appear more attractive than all of the high-value crops except for high-density orchards.

The UNODC Afghanistan Opium Survey 2018 shows a 15-year time series for opium prices, with an average of around \$ 215/kg; orchards represent an investment for at least 15 years and so their performance should be compared with this average price rather than the current price at the bottom of the market cycle. This suggests that, for a household using mainly family labour, conventional fruit orchards and vineyards offer a viable alternative to opium poppies – not a massively higher return but a sufficient return to give them a choice between opium and high-value crops.

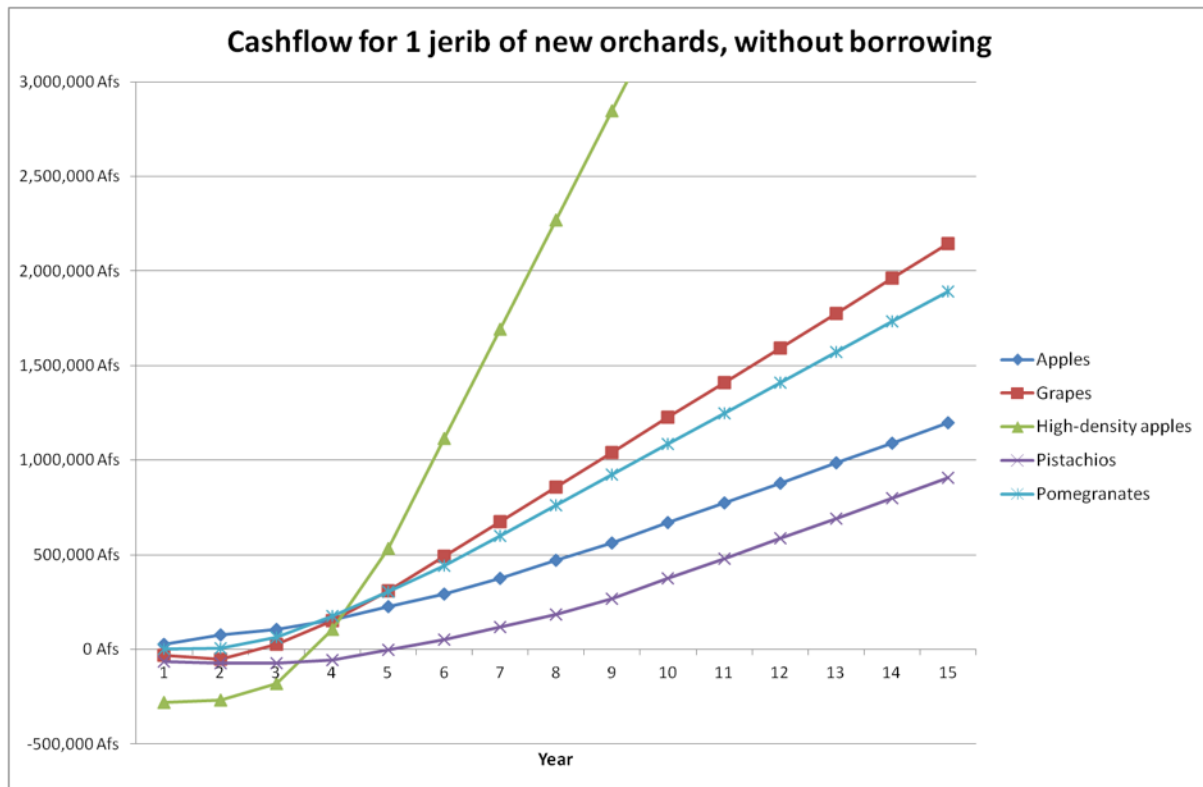
The comparison between greenhouses and poppies is more complex because it depends on the size and number of greenhouses and the area of poppies. Project calculations shows that one 400 m² greenhouse will generate Value Added of around \$ 750 from a single crop per year, equivalent to that from just over half a jerib of poppies. For a family currently dependent on opium production, that would probably not be sufficient income to let them give up poppies entirely. However, if the greenhouse were given by a project rather than paid for by the farmer, then the beneficiary would generate Value Added of around \$ 2,000 per year, which might well be enough to let them live without growing poppies.

Sustainability

All of the high-value crops appear profitable from the very first year for beneficiaries who are given the greenhouse or saplings, together with the first year's inputs. However, to be truly sustainable on a large scale, high-value crops must also work when the farmer has to replace the greenhouse without project support, and for replicators who want to establish orchards or greenhouses using their own funds or borrowed money.

The figures for Gross Margin and Value Added take account of the full capital cost of the high-value crops including saplings, supports, greenhouses and replacement plastic, though they do not value the farmer's time for preparing the ground and planting the orchard; they also use a discount rate of 10 % per year to reflect the time value of money. Under these assumptions, all of the high-value crop appear profitable over 15 years (i.e. they have a positive Net Present Value). However, most farmers have no access to credit, or only to micro-credit at the very high rate of 2 % per month (24-27 % per year, depending how the interest is calculated). For them, the projected cash-flow of the orchard or greenhouse will be a critical factor in whether or not they can afford to invest.

The following chart shows the projected cash-flow for one jerib of the different kinds of orchards, assuming that the farmer is not borrowing money and paying interest:



Source: Based on Gross Margin budgets prepared by the project in 2018

Both conventional apple orchards and pomegranates show a positive cash-flow from the first year, so the farmer only needs to fund the cost of the saplings for a few months until he⁵⁶ gets an income from the intercrop. The Gross Margin budgets show a lower-value intercrop for grapes, probably a forage crop rather than vegetables, so here the cash flow does not become positive until the third year, presenting the farmer with a more difficult funding challenge. Pistachio plantations are not considered suitable for intercrops, so it would take six years for the farmer to recoup his initial investment; it is questionable whether a farmer would make such a long-term investment to produce a crop that grows wild on the hills around his village.

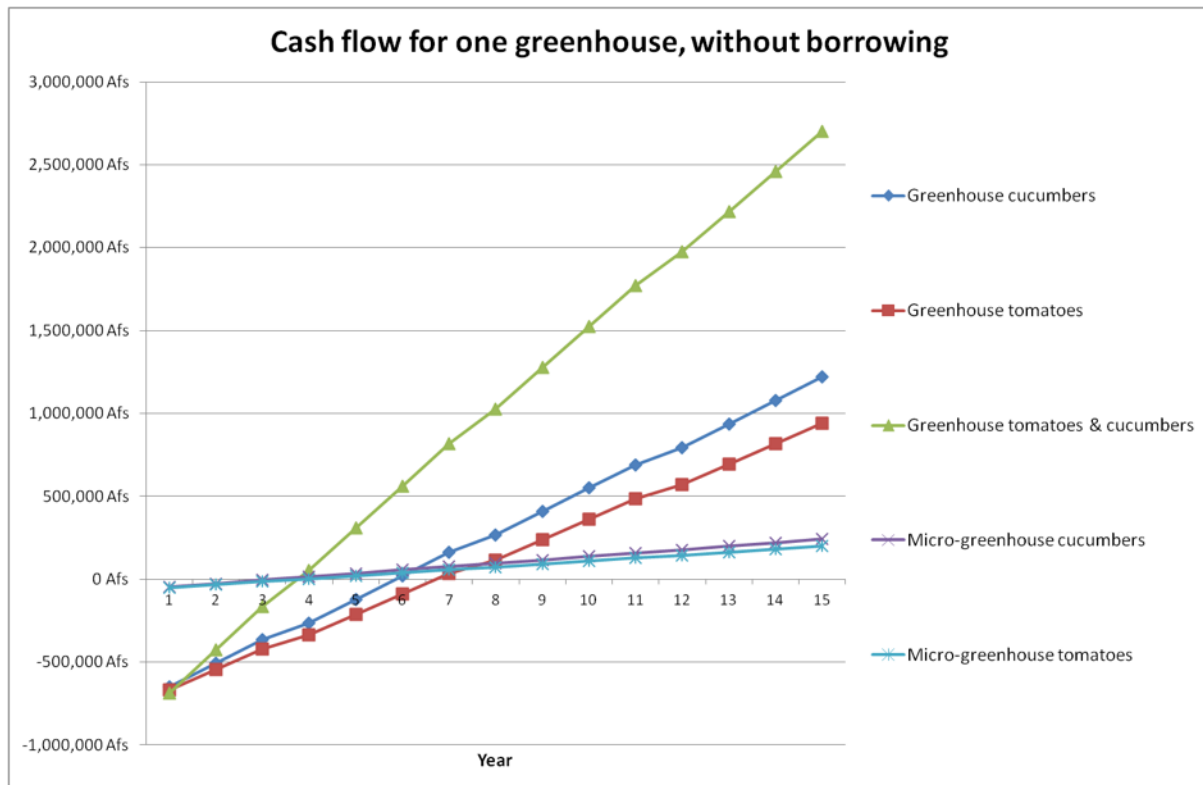
High-density apple orchards present a rather different story: cash-flow does not become positive until year 4, but then rises steadily and offers much higher margins per jerib than conventional orchards. The question is how could the farmer raise \$ 4,500 to plant one jerib, and then service the loan for the next four years? If affordable multi-year credit could be made available, then it might help larger and more commercially-oriented farmers to establish high-density orchards, but without such credit it is doubtful whether this intervention will be widely replicated.

These cash-flow projections are very sensitive to the assumptions made about the intercrop – its type, yield and price. The project might wish to re-visit these assumptions and ensure that a consistent and conservative approach has been applied to all the orchard budgets. The budgets also suggest that intercropped vegetables are quite a high-value crop in their own

⁵⁶ So far, all orchard beneficiaries have been male, whilst both men and women have received greenhouses.

right, without the capital costs of a greenhouse or the establishment time of an orchard; the project might consider whether it could develop a “Field Vegetables” package comprising tools, seeds, fertilisers, pesticides, training and advice, as a relatively low-cost intervention that could be rolled out over a large area. The biggest challenge would probably be marketing a large volume of vegetables once the immediate local demand had been satisfied, so the marketing component should look at how much produce could realistically be marketed, and how this could best be done.

The following chart presents similar cash-flow data for one greenhouse of each type:



Source: Based on Gross Margin budgets prepared by the project in 2018

Micro-greenhouses have a modest initial outlay of around \$ 1,250 but their cash-flow does not become positive until year 4; it is unlikely that many women would be able to afford this without project or government support.

Conventional greenhouses were projected to cost almost \$ 14,000⁵⁷. If producing two crops per year, then their cash-flow becomes positive from year 4; if cropping once per year, then not until year 6 or 7. It is hard to envisage widespread uptake of commercial greenhouse without either a new source of affordable credit, or farmers who are able to cross-subsidise from some other business activity.

⁵⁷ This entire section is based on project calculations from cost estimates made before exact procurement prices were known. So far the project has managed to procure greenhouses more cheaply, at around \$ 8-10,000 each, but the size has been reduced from 400 to 300 m² and initial yields were also lower than forecast. Once another year or two of data become available, the project should be able to update all of its gross margin budgets to reflect actual costs and revenues.

Return on investment

The project has implemented a diverse range of investments, ranging in cost from under \$ 200 for a jerib of pomegranates to almost \$ 14,000 for a commercial greenhouse. Which of these offers the best return on limited project funds, or put another way, which would give the best return on the farmer's own investment?

A key measure in investment appraisal is the "Net Present Value" (NPV), the sum of each year's cash-flow, positive or negative, after adjusting for the interest or discount rate. If the NPV is positive, then the investment is profitable, and the higher the NPV the better. However, NPV changes directly with the scale of the project and does not show the return relative to the size of the original investment. Two of the ways in which this can be done are the "Internal Rate of Return" (IRR) and "Return On Investment" (ROI)⁵⁸:

- **Internal Rate of Return** shows the maximum interest rate at which a farmer could borrow money and still make a positive return on his or her investment (formally, the IRR is the interest or discount rate at which the Net Present Value of the investment is zero). If the IRR is higher than the farmer's cost of borrowing, then the investment is worthwhile.
- **Return On Investment** is calculated as the Net Present Value of the investment, excluding capital cost, divided by the capital cost. If the ROI is greater than 1, then the investment is worthwhile.
- For both measures, the higher the number the better. All other things being equal, the farmer should choose the investment with the highest IRR and ROI.

⁵⁸ If the farmer did not establish an orchard or greenhouse, then he or she would presumably use the land to grow another crop. Establishing the high-value crop implies foregoing the Gross Margin from the alternative crop that is no longer being grown, which is known as the "Opportunity Cost". In this section, the alternative crop is assumed to be irrigated wheat, and so the margin for wheat is subtracted from the margin for the high-value crop to measure how much better off the farmer is by making the investment and switching crops.

The following chart shows these measures for one greenhouse of each kind, or one jerib of each type of orchard:

Intervention	Project cost	NPV	ROI	IRR
Greenhouses				
Cucumbers & tomatoes, greenhouse, 400 sq.m	\$ 13,954	\$ 14,714	2.1	36%
Cucumbers, greenhouse, 400 sq.m	\$ 13,784	\$ 4,319	1.3	18%
Tomatoes, greenhouse, 400 sq.m	\$ 13,466	\$ 2,244	1.2	14%
Cucumbers, micro greenhouse, 60 sq.m	\$ 1,295	\$ 1,374	2.1	43%
Tomatoes, micro greenhouse, 60 sq.m	\$ 1,247	\$ 1,063	1.9	35%
Orchards				
Apples, high-density, with intercrop	\$ 4,448	\$ 35,942	9.1	63%
Grapes, with intercrop	\$ 284	\$ 12,585	45.3	106%
Pomegranates, with intercrop	\$ 188	\$ 11,269	60.9	353%
Pistachios	\$ 200	\$ 3,937	20.7	34%
Apples, conventional, with intercrop	\$ 246	\$ 7,130	30.0	-

Source: Based on Gross Margin budgets prepared by the project in 2018

Reading along the first row, for a 400 m² commercial greenhouse producing two crops each year, one of cucumbers and one of tomatoes:

- The total **Project cost** – for the greenhouse and the first year’s seeds, fertiliser and pesticides – is \$ 13,954.
- The **NPV** or “Net Present Value” is the discounted sum of the value of all of the cucumbers and tomatoes sold over 15 years, less the costs of labour, seed, fertiliser, pesticide, replacement plastic and the original greenhouse itself. In this case the farmer would get back the full original investment plus \$ 14,714. This value is large and positive, indicating that the investment is worthwhile.
- The **ROI** or “Return On Investment” is the total discounted return (\$ 13,954 + \$ 14,714) divided by the original project cost of \$ 13,954. In this case, the investment pays back just over twice its original cost.
- The **IRR** or “Internal Rate of Return” is the maximum rate of interest that the farmer could pay if he or she had to borrow the full project cost and pay it back with interest. In this case, the investment is profitable at interest rates of up to 36 %⁵⁹.

Considering each type of intervention:

- *Commercial greenhouses producing one crop per year* offer Returns On Investment of around 1.2 and IRRs of 14-18 %. They would not be worthwhile for a farmer who had to borrow from a micro-finance organisation at 2 % per month (24-27 % per year) but would represent an acceptable return on a loan from an international finance institution such as the World Bank – if such were available.

⁵⁹ The IRR cannot be calculated for the last row in the table, conventional apple orchards, because the cash-flow is positive from the very first year.

- *Micro-greenhouses* and *commercial greenhouses cropping twice per year* offer Returns On Investment of around 2.0 and IRRs of 35-43 %. In theory these would be worthwhile even at the high interest rates charged by micro-finance organisations, but the profit margin is probably not high enough to justify the substantial risk.
- *High-density apple orchards* offer a Return On Investment of more than 9 and an IRR of 63 %; if finance were available, larger farmers might well be interested in borrowing to establish such orchards.
- But by far the best returns come from *conventional orchards*, with Returns On Investment of 20-60 and IRRs of up to 350 %⁶⁰. Cash requirements are low and most of the real investment comes from the farmer's own labour. The returns on investment appear so high that both donors and government should prioritise conventional orchards over the other high-value crops so far considered. This conclusion could be applied directly in the next round of interventions by CBARD-W.

Results in practice

All of the data in this section are based on Gross Margin budgets compiled by the Chief Technical Advisor and local experts, rather than on actual results from CBARD-W. Over time they should be updated to reflect actual project costs, returns to beneficiaries measured by the APY survey⁶¹, and production costs for which a new survey instrument will be required.

The only APY survey data available so far cover the first year's results for 138 greenhouses, showing average revenue of \$ 915 for the majority that had produced just one crop and \$ 1,330 for those who harvested a second crop within the period. These values are lower than the projected annual revenue of around \$ 2,400 per greenhouse, but they cover the very first steps of a new venture when farmers must learn a whole range of new technical skills and find the best way to market their crop. Returns will probably rise in future years and can then be used to refine the Gross Margin budgets.

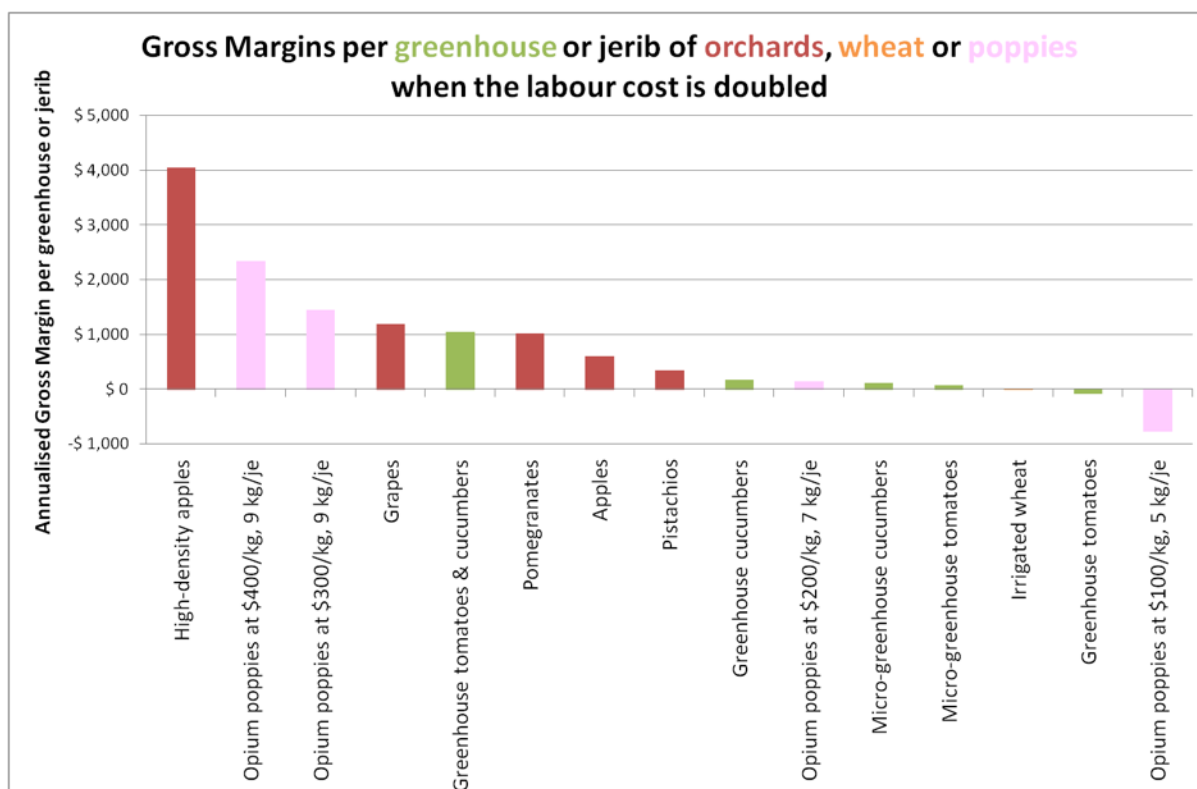
Effect of wage rates

One of the main effects of economic development is to create employment and raise wage rates. This increases the income of working families, encourages a substitution of capital for labour, and changes the relative profitability of different activities.

⁶⁰ Pistachios have a rather different cash-flow from the other orchards: because there is no inter-crop, the net cash-flow does not become positive until year 6 but is good thereafter. This results in a modest IRR of 34 % but an impressive ROI of almost 21.

⁶¹ Annual records of Area, Price and Yield from all relevant project beneficiaries.

The following graph explores what would happen if the cost of agricultural labour doubled from 300 to 600 Afs, i.e. to \$ 8/day:



Source: Based on Gross Margin budgets prepared by the project in 2018, with the daily wage rate doubled to 600 Afs

Under this scenario, poppy cultivation at an opium price of \$ 100/kg is highly loss-making for the farmer who must hire labour. Even at \$ 200/kg poppies are out-performed by all of the high-value crops except micro-greenhouses. Grapes and pomegranates approach the margin of poppies even as the opium price rises towards \$ 300/kg, a price that is only reached about one year in five.

What could drive up the price of rural labour? Orchards would not be sufficient, as their annual labour requirement is less than that of opium poppies, but greenhouses absorb a lot of labour, as can food processing. In most countries the rise in rural wage rates is driven not by agriculture at all, but by non-farm employment and, most crucially, by commuting or migration to better-paid urban jobs.

Storage and processing

Two interventions being demonstrated by the project are zero-energy cold stores for apples, and raisin houses for drying grapes. Estimates of their economics have not yet been made, but the question can be looked at the other way round:

- Cold stores cost the project an average of \$ 10,000 and are designed to store 10 tonnes of apples each year. At a discount rate of 10 %, a cold store would need to raise the selling price of apples by 66 %, from 30 Afs/kg to 50 Afs/kg, in order to pay for itself in five years.

- Raisin houses cost an average of \$ 6,800 and will dry 10 tonnes of grapes per year to produce 2-2.5 tonnes of raisins. They would have to add 45 % to the original price of the grapes (assumed as 30Afs/kg) in order to pay back in five years.

Data are not yet available on seasonal fruit prices in Afghanistan. Experience from other countries shows that the peak price of apples, reached just before the new crop comes onto the market, may be as high as twice that immediately after harvest. However, prices typically build up slowly over several months, and it remains to be seen whether the project cold stores are able to store apples in good condition for long enough to make this investment worthwhile.

The economics of raisin production will depend on the yield (dry: fresh ratio), the quality and marketability of the raisins, and the seasonal price fluctuations in the specific conditions of Afghanistan.

Annex 7. Stimulating and measuring changes in poppy production

TO BE UPDATED

The project has a clearly-stated purpose of reducing opium cultivation in the treatment communities, which raises two key questions:

- How would high-value crops lead to a reduction in the poppy area?
- How will the project tell whether changes in the poppy area are due to project interventions or other factors?

Mechanisms for high-value crops to reduce poppy area

The Theory of Change set out in the Project Document shows how improved production and marketing of high-value crops, supported by improvements in agri-business infrastructure, should lead to “Improved household income with less dependency on illicit cultivation”.

An important question is whether increased income from high-value crops will lead to farmers reducing their area of opium poppies, or whether they will simply grow high-value crops as well as opium poppies. At least three different and potentially overlapping mechanisms can be envisaged for how an increase in high-value crops might lead to a decrease in poppy area:

- 1) ***Resource diversion***: Farmers are no longer able to grow opium poppies because their land, labour or capital are tied up by high-value crops.
- 2) ***Dependency reduction***: Farmers could still grow opium poppies, and it might be profitable for them to do so, but they do not need to grow opium to survive because they get an adequate income from high-value crops.
- 3) ***Conditionality***: Farmers must stop growing opium poppies in order to receive benefits from the project.

Each of these mechanisms is now considered in more detail:

1) *Resource diversion*: Opium cultivation could be reduced by diverting the resources of land, labour or capital to alternative and more profitable crops; if farmers genuinely find that they can make more money from other activities, then opium production should indeed decline. However, high-value crops are unlikely ever to occupy all of the 328,000 hectares that grew poppies in 2017, due to constraints in production, marketing and capital availability. There is also considerable scope for poppy production to relocate onto rainfed areas or to previous desert areas that can now be irrigated with solar-powered borehole pumps. Thus a large-scale initiative to promote high-value crops might result in these crops being grown on the best and most accessible land, whilst poppies continued to be cultivated on other land.

Diverting labour away from opium production could be achieved in many different ways, including high-value crops, livestock, agro-processing, non-farm rural employment and urban-rural migration. In the long run, a rise in the cost of agricultural labour could play a major role in reducing opium production, as it did in Thailand. However, gross margin budgets produced by the project indicate that most orchard crops require fewer annual work-days than poppies, so these interventions alone may not be sufficient to divert labour away from opium production. There is also the possibility that women and children will be employed in the poppy fields whilst men work in the orchards and vineyards.

Capital does not seem to be a major limiting factor in poppy production, since there is little long-term investment, and the opium buyers will often supply inputs or extend credit for

working capital. Compared to this, greenhouses are quite capital intensive, and the lack of available finance was seen by beneficiaries as one of the major constraints on other people replicating models demonstrated by the project.

One key issue is the price elasticity of supply of opium, as clearly demonstrated by the second chart in the “Key Findings” report of the 2018 UNODC Afghanistan Opium Survey. As land and labour are diverted away from poppies to other crops or activities, opium production will fall, prices will rise, opium cultivation will appear more attractive and the margin of high-value crops over opium will be eroded. The current price of opium in Afghanistan is around \$ 100/kg, so poppy margins may even be negative and many alternative crops will seem more attractive to farmers.

If opium production falls and prices return to their recent level of around \$ 200/kg, then, as shown in the previous section, opium will become more profitable than pistachios but less profitable than conventional fruit orchards or vineyards.

However, in recent years buyers have been willing to pay \$ 300/kg or more, and at this price only high-density orchards can compete. It therefore seems likely that a major expansion of high-value crops would lead to a reduction in the poppy area and a rise in the opium price. Conventional orchards would then seem less attractive, the uptake of high-value crops would slow, and a new equilibrium would be reached with a lower level of opium production and a higher opium price.

2) Dependency reduction: A slightly different rationale – and the one emphasised in the project’s Theory of Change – is that alternative livelihoods will make households less dependent on opium production: it might still be the most profitable crop, but they could at least live a normal life without having to grow opium. Reduced dependency would be most likely to lead to reduced opium production if supported by other social, moral, religious or legal incentives and sanctions, with alternative livelihoods forming one part of a comprehensive counter-narcotics strategy. This is in keeping with the conclusion of Rand Corporation (2015) that “higher rural incomes ... appear to be a necessary, if insufficient, condition for substantially curtailing the cultivation of illegal crops”.

Developing profitable alternatives to opium helps with both resource diversion and reducing dependency, since the smaller the economic advantage of opium over the alternatives, the easier it should be to persuade people to move out of poppies.

3) Conditionality: The Badghis community leaders reported that they had given signed undertakings that opium poppies would not be grown in their villages, and also said that they had been promised that everyone in the village would receive some kind of benefit from the project. Given the limitations of the budget, it seems unlikely that any official representative of the project would have made such a promise, but the current situation seems to be one of *conditionality*: the communities have agreed to cease opium production as a condition to receive future benefits from the project – and their leaders made clear that poppy production would resume if such benefits were not forthcoming.

Rand Corporation (2015) reviewed the experience of conditionality and concluded that is not an effective means of reducing narcotics production. In terms of this project, it is quite possible that the treatment villages will resume poppy production once they stop receiving new benefits from the project.

In summary, the Project Document emphasises the mechanism of *dependency reduction*, but at this early stage in the project few beneficiary households have yet seen their incomes rise. They must therefore be responding to expectations of future benefits, and to the implicit and explicit *conditionality* of the project. The power of conditionality will wane as the project reaches its end and, at its current scale, the extent of *resource diversion* will be rather limited. The critical issue, which this project sets out to test, is whether dependency reduction through high-value crops will give farmers sufficient incentive to give up growing poppies even in those years when it would clearly be profitable to do so.

Measuring and interpreting changes in poppy area

As a central part of its monitoring strategy, the project will utilise remote sensing through the services of UNODC's *GLOU34: Illicit Crop Monitoring Project* as a means to measure CBARD-West's impact on cultivation of opium poppy on a yearly basis⁶². Community-level results are not yet available from the satellite images collected in spring 2018, the first since project interventions began, and there will be several more to follow; it would therefore be useful to consider in advance how the results of these surveys should be interpreted.

The impact of any project may be defined as the difference between the actual situation of the treatment units after the project, and the situation that these units would have been in if there had been no project. This is particularly important in agricultural projects where weather, market conditions, pests and diseases can cause big fluctuations in output and revenue from one year to the next, often making it hard to distinguish project impact from these external factors. Determining the counterfactual situation of "What would have happened without the project" is therefore essential, but also one of the most challenging parts of project evaluation. In this case the project design includes 38 control communities as well as its 70 treatment communities, and so will have a good basis to estimate the counterfactual situation.

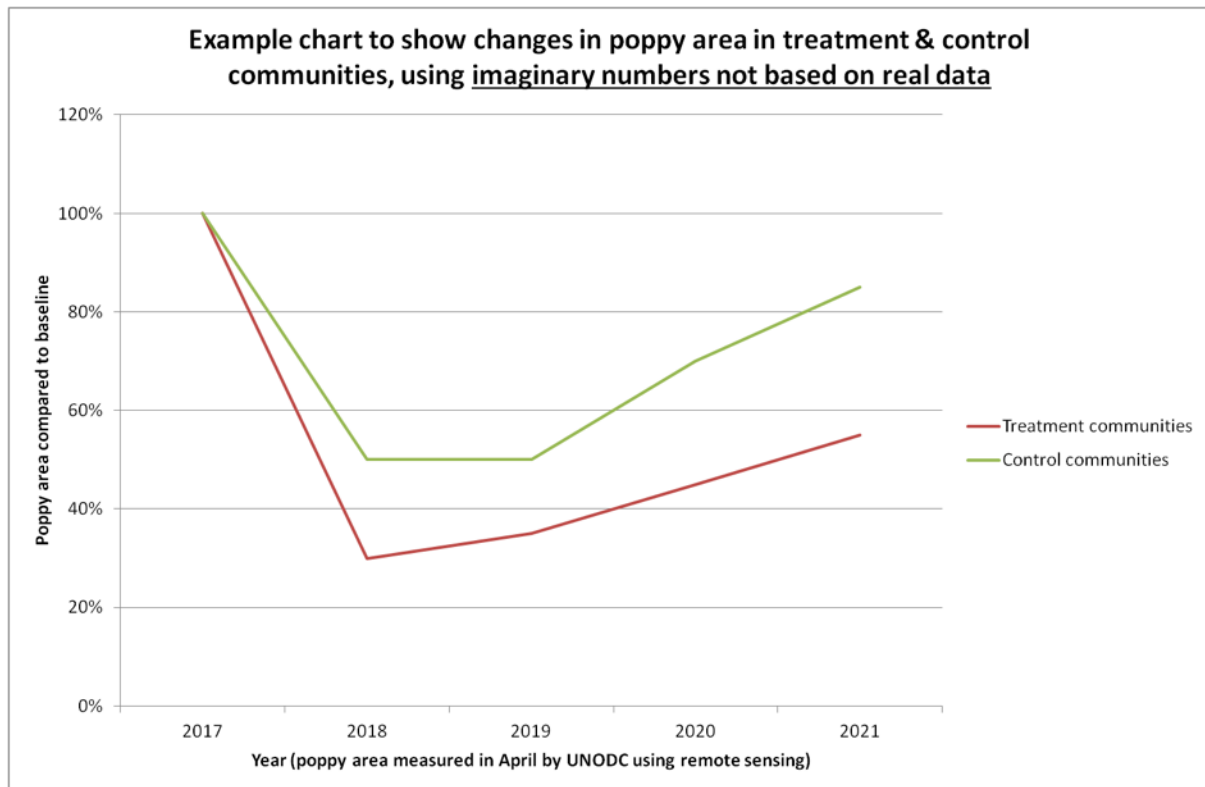
Once results have been obtained and analysed, and after making any necessary adjustments for underlying differences between the treatment and control communities, four different outcomes can be envisaged:

- 1) Opium poppy area ***reduced in treatment communities*** by ***significantly more*** than in control communities (control communities show an increase, no change, or a smaller decrease than treatment communities) ⇒ **PROJECT SUCCESS**
- 2) Opium poppy area ***reduced in treatment communities*** but ***not significantly more*** than in control communities (control communities show a reduction at least as high as that in treatment communities) ⇒ **PROJECT FAILURE**
- 3) Opium poppy area ***increased in treatment communities*** but by ***significantly less*** than in control communities (control communities show a larger increase) ⇒ **PROJECT SUCCESS**
- 4) Opium poppy area ***increased in treatment communities*** and ***not significantly less*** than in control communities (control communities show a decrease, no change, a smaller increase or a similar increase) ⇒ **PROJECT FAILURE**

⁶² Project Document page 19: VI. MONITORING AND EVALUATION; Opium Production Monitoring Agent.

Scenarios 1 and 4 are easy to understand and present, as they involve both an absolute and a relative increase or decrease in poppy area. Scenarios 2 and 3 require more careful explanation, as they deal with the project “failing” even though the poppy area decreased, or “succeeding” even though the area went up. That is why it is good to establish the rules in advance, so that there can be no accusations of the final evaluation attempting to mislead stakeholders.

One way to make this complex story more accessible is to graph the changes in poppy area for treatment and control communities, compared to the baseline of 2017. The following chart shows how this might look, using purely imaginary data:



Provided the line for treatment communities is clearly below that for control communities, then the project is having the desired impact, regardless of whether the lines themselves are heading up or down⁶³.

⁶³ The simplest approach, and the one shown here, is to compare the overall change in treatment communities with the overall change in the control communities. However, it is also possible to compare each treatment community with a specific matched control community or control group, to create an explicit counter-factual scenario for every treatment community. The lines would then be labelled “With-project” and “Without-project”, rather than “Treatment” and “Control”.

Annex 8. References

TO BE UPDATED

a. Project documents

Project reports

- CBARD-W Project Document
- CBARD-W Inception Report
- CBARD-W Quarterly Reports:
 - 2017 Q1
 - 2017 Q2
 - 2017 Q3
 - 2017 Q4
 - 2018 Q1
 - 2018 Q2
 - 2018 Q3
- CBARD-W Annual Progress Reports:
 - 2016
 - 2017

Planning documents

- Procurement plans:
 - CBARD-W Procurement Plan 2017 (Excel)
 - CBARD-W Procurement Plan 2018 (pdf)
- HR plans:
 - CBARD-W UNDP HR plan
 - CBARD-W NTA HR plan
- CBARD-W Annual Work Plan 2018
- CBARD-W Revised AWP, PP & HR plan 2017
- CBARD-W Needs Assessment and Baseline Report

Commissioned studies, CBARD-W

The following documents are also attached in a zipped file as Annex 3: *Studies commissioned by CBARD*:

- *Financial Mapping, Second Report*. Afghan Agro Services, 20 October 20, 2018.
- *Off-Farm Employment and Access to Finance Report*. Karim Merchant, 6 September, 2017.
- *Apple Value Chain in Badghis, First Report*. Afghan Agro Services, 16 August 2018.
- *Grape Value Chain in Farah, First Report*. Afghan Agro Services, 18 August 2018.
- *Greenhouse Crops Value Chain in Farah, First Report*. Afghan Agro Services, 18 August 2018.

- *Pistachio Value Chain in Badghis, First Report*. Afghan Agro Services, 14 August 2018.

Commissioned studies, CBARD-E

The following documents are also attached in a zipped file as **Error! Reference source not found.: Error! Reference source not found.:**

- *Citrus Value Chain on Nangarhar, First Report*. Afghan Agro Services, 15 August 2018.
- *Pomegranate Value Chain in Nangarhar, First Report*. Afghan Agro Services, 18 August 2018.

b. Other UN documents

UN

- *One UN for Afghanistan: 1 January 2018 – 31 December 2021*.
- *Country programme document for Afghanistan (2015-2019)*.

UNODC

- *Afghanistan Opium Survey 2018, Key Findings*. UNODC Research & MCN/NSD, November 2018.

c. Documents on related projects

AREDP & RED

- *Independent Evaluation of the AREDP REDKAN and RED-Helmand projects: Final Report*. Erik Lyby and Sayed Ahmad Rohani, March 2014.

d. Government documents

- *Agribusiness Charter, Comprehensive Strategy and Action Plan: 2018-2023*. Government of the Islamic Republic of Afghanistan, July 2018.
- *Citizens' Charter National Priority Programme*. Government of the Islamic Republic of Afghanistan, December 2016.
- *Afghanistan National Peace and Development Framework (ANPDF): 2017 to 2021*. Government of the Islamic Republic of Afghanistan (undated).

e. Other studies and papers

RAND Corporation

- *Reducing the Cultivation of Opium Poppies in Southern Afghanistan*. Victoria A. Greenfield, Keith Crane, Craig A. Bond, Nathan Chandler, Jill E. Luoto, Olga Oliker. RAND Corporation, 2015.

AREU

Afghanistan Research and Evaluation Unit

- *Between a Rock and a Hard Place: Counter-narcotics efforts and their effects in Nangarhar and Helmand in the 2010-11 growing season.* David Mansfield. Afghanistan Research and Evaluation Unit, Case Study Series, October 2011. Funded by the European Commission.
- *Alternative Livelihoods: Substance or Slogan?* David Mansfield and Adam Pain. AREU Briefing Paper, October 2005.
- *Life in the times of 'late development': Livelihood trajectories in Afghanistan, 2016-2002.* Adam Pain and Danielle Huot. Secure Livelihoods Research Consortium/AREU Working paper 50, February 2017. Funded by the European Commission.

Annex 9. Project organigram

File attached.