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POLICY BRIEF

WHAT DOES IT MEAN TO TAKE CONTEXT SERIOUSLY FOR POST- HARVEST PROCESSING AND STORAGE?

Lessons from Afghanistan

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Why it matters

Fears of high post-harvest losses cause many farmers in Afghanistan to sell harvests at low prices and buy back food later at much higher prices. Support for food processing and post-harvest storage could contribute significantly to food security and nutrition, but this was neglected in aid programming in the 2001–2021 period. Instead, the few interventions in the sector focused on expensive technological packages for larger private sector companies, with no tangible benefits for those who were food insecure.

What aid programmers got wrong

Project developers worked with narrow paradigms about how markets work. They equated traded volumes with production surpluses, which they assumed farmers try to maximise. It was believed that greater overall market capacity for storage at the lowest cost drives more efficient trade, making the best price possible for producers and thus giving the greatest stimulus to agricultural production.

This market perspective led projects to focus on market volumes and cost reduction, prioritising technologies that, theoretically, were most cost-efficient. Support was given to larger industries with commercial-scale cold storage; and, at village level, to those farmers who could produce surpluses, i.e., the wealthiest, with most land and highest production.

What was wrong with the assumptions?

The projects saw storage as a way to increase volumes in food markets. But for most agricultural producers, sales are not driven by surpluses, but by fears of high storage losses. Although they engage with markets, they are more interested in subsistence. Commercial-level storage is irrelevant to their need to preserve food to avoid having to purchase later at higher prices.

Targeting theoretically cost-effective technologies where volumes were high was justified by a belief that the benefits would be widely distributed. It was assumed that facilities installed in villages would be accessible to all, but this was false. Not all villagers had access to these facilities, especially to those installed on private land, and this only added to the power which the wealthier had over the poor. There was no single model of collective action across the country, but projects did not adapt modalities to the local social reality.

Policy implications: getting it right

- Different interventions are needed when post-harvest food storage is seen as a means to shore up households' subsistence, rather than to sell more to market. Smaller, household-based storage facilities, which can also be used in remote rural areas, may make a more important contribution to households' food security and nutrition than commercial-level storage.
- If facilities are expected to be shared, support for them must be based on an understanding of how people work together to share opportunities. This includes the terms through which different households get access to facilities installed on private land. Terms vary from place to place, so no single solution can be rolled out nationwide. Consideration should be given to building on what people, often groups of women, already practice, e.g. using off-grid energy sources for drying.
- Improving food storage is not simply a technical solution or a market one. Understanding context can fundamentally change the type of technology supported. Where collective action is a challenge, projects could think in terms of the individual management of some new technology. This may mean supporting a less technically effective solution if it is cheaper and can be provided more widely – thus making it more accessible to rural areas and mitigating elite capture.

Characterising post-harvest processing in context

In Afghanistan, post-harvest storage and food processing scarcely featured in the agricultural rehabilitation agenda from 2001 to 2021, although the limited availability of post-harvest food storage facilities was recognised. It was reported again in 2021 as an abiding constraint for those with surpluses to sell (Merchant and Synnevåg, 2021). The few interventions that were made during this period focused on installing refrigerated storage facilities in larger-scale private sector companies, reflecting the donors' emphasis on improving production and market development in areas of high potential (i.e., well-irrigated areas and those close to urban centres). A few programmes worked at village level to improve customary practices using low-tech, zero-energy storage facilities. One or two such installations were made per village on a cost-share basis, targeted to individuals with land and surpluses. It was assumed that the facilities would be made available for more general use at the village level. Little appears to have been done using solar power for food processing and drying at the household level.

The infrastructural challenges that households face in selling agricultural surplus are considerable. Physical access to markets can be difficult, given Afghanistan's poor road coverage and the state of the roads. Even where new roads have been built, most households

cannot afford vehicle transport costs and so continue to use donkeys. Energy is a second challenge. Less than 11% of rural Afghanistan is connected to the (unreliable) mains electricity. Although the proportion of Afghanistan's population with some access to electricity increased from just 28% to 84% between 2006 and 2016, much of this can be attributed to the development of off-grid systems and primarily of solar energy for use as lighting rather than cooking.

Understanding post-harvest handling of produce in its context means seeing it not simply as a technical challenge to improve people's ability to bring surpluses to the market. First, post-harvest handling has to be seen within the context of the motivations and interests of those who sell crops immediately after harvest (when they know prices are lowest) and the consequences of doing this. Market sales do not necessarily indicate either an entrepreneurial interest or the production of surpluses. Many rural households have a greater interest in increasing the subsistence they can achieve from farm production than in earning income, but they are often compelled to sell at harvest time because of high storage losses.

Post-harvest handling then has to be seen in the context of how different households can or cannot work together or share facilities at village level, especially where these are installed on private land. Not all villagers may have access to or use of 'village-level facilities' where these are installed on private land.¹ Modes of collective action will vary across the country.²

1 This is of course true of many other facilities that may be installed on private land by aid agencies but are intended for collective use. In many cases, attention is simply not paid to the question of the land ownership; in others, assumptions are made about shared access.

2 For more on differences between villages, see the companion paper in the series: 'What does it mean to take context seriously for rural differentiation?' (Pain and Levine, 2024).

Understanding post-harvest processing practices

In upland areas of Afghanistan where there is a single cropping season, traditional post-harvest management has aimed to preserve and store grain and fruits, and to a limited extent green vegetables, to feed the household over the winter period. This diet is supplemented with animal products, mainly milk products and meat. Given the semi-arid environment and cold winters, grain is stored in sacks and large clay pots. Rodents and pests are the main sources of losses. Where potatoes are grown, as in Bamyan and Badakhshan Provinces, traditional clamping methods of storage are used. Fruits such as mulberries and apricots are commonly air dried in the sun. Much of this is a household-level activity and is undertaken by women. Women also play a critical role in processing livestock products (making yoghurt and cheese), and they often sell some at the village level.

At lower altitudes and where there is irrigation, there are two growing seasons and a wider repertoire of crops. There is a greater range of practices for post-harvest management. As in higher altitudes, grain staples are stored in sacks inside the house, but chemical treatment might be applied to reduce pest losses. Grapes are a key cash crop, and there are traditional methods of processing, including by storing the fresh grapes in sealed air-tight clay pots for sale in the off-season (widely practiced in the north) and drying methods for producing raisins. Vegetables such as tomatoes are often sun dried for the family's own consumption and there is some small-scale processing of pickles by women's groups to preserve vegetables and to meet local demand. Fresh fruit and vegetables are also traditionally stored in relatively small quantities in underground cellars to keep the produce cool. However, since these are without any means of temperature or humidity control, storage losses can be considerable.

Because most vegetables are perishable, and there are high losses with customary storage practices, households are effectively compelled at harvest time to sell anything above what they will consume in the very short term. Households are, of course, aware that they must sell at the time when prices are lowest, and that later in the season they buy the same commodities at prices that are double or more.³ Households rarely grow a crop that is solely for sale to the market: production is geared first of all to meeting consumption needs.

Because it always costs households more to buy food than can be earned by selling the same quantity of food,

households value any benefits from reduced losses, e.g., through improved cold storage facilities (zero-energy). This is because it reduces household expenditure by increasing how much of their consumption can be met from the harvest. Households that do not have immediate cash needs have an additional benefit in delaying the sale of surpluses, if they can wait until prices rise after the immediate harvest period.

Projects that introduced improved cold storage facilities targeted individual farmers judged to have sufficient land and enough surplus production to use them. Inevitably, these were often influential individuals, well-connected to the authorities. An assumption was made that the owners would maintain the facilities, but that their use would be shared with other households in the village. This has not always been the case. Facilities may be shared with relatives and with sharecroppers, but village households with no relationship to the landowner do not necessarily get access. Households may need to develop social relations with these farmers in order to gain access, but this implies some form of obligation or reciprocity: the project-supplied facilities have thus become one more source of power for the already larger farmers, and one more social cost for the ordinary household, which may be paid in a variety of ways. In sum, these cold storage facilities have been treated as a private asset.

What does 'taking context seriously' mean for post-harvest processing practices?

Understanding how farmers think about food storage opens up different approaches for improving storage. Households forced to sell perishable produce at low prices at harvest time are market-engaged but they are nevertheless subsistence-oriented. They value the benefits of better storage facilities primarily for what this contributes to subsistence, and thus to reducing household costs. This suggests that a food security and nutrition lens to post-harvest management can be an important alternative or complement to the more commonly held market perspective of supporting households vulnerable to food insecurity. Reductions in post-harvest losses are likely to have food security benefits. Improved storage and processing for subsistence is also more likely to promote the engagement of women, who play a key role in food processing. This perspective is important both for high-potential, well-connected areas as well as more remote areas, where there are even greater infrastructural challenges.

³ See AREU (2023). This happens even in Laghman Province, a high-potential area with relatively good infrastructure.

Where programmes support the introduction of facilities that are designed to be shared by many households, it is also necessary to think about the social dimensions of how people work together and the terms through which different households get access to facilities installed on private land. If facilities are targeted to individuals, and given that there will always be limited supply (it is never possible to target everyone), programmes must recognise the danger that the hardware may be captured by more powerful individuals and they must develop a plan to mitigate this. If facilities are targeted at the community level, much will depend on how the community operates as a collective. In some cases, for example, Community Development Councils (CDCs) provide an effective way of working in everyone's

interests; in other cases they do not. Consideration could be given to targeting interventions to smaller household groups or groups of women and to building on existing drying practices, for example, using off-grid energy sources.

This also suggests that the choice of technologies should not be based only on technical considerations of what is most effective, or even most cost-effective. For example, where collective action is a challenge, it may sometimes be advisable to think in terms of the individual management of some new technology. In such cases, a cheaper (albeit less effective) technology may be more appropriate, if it can be provided more widely and thus mitigate elite capture.

References

- AREU – Afghanistan Research and Evaluation Unit (2023) 'Findings from field studies on post-harvest storage and processing in Afghanistan'. Draft report. Kabul: AREU.
- Levine, S. and Pain, A. (2024) 'Ten traps to avoid if aid programming is serious about engaging with context: lessons from Afghanistan'. SPARC Policy Brief. London: ODI.
- Merchant, K. and Synnevåg, G. (2021) 'Dark clouds on the horizon: post-COVID constraints for Afghan food systems'. Noragric blog, 19 January (<https://blogg.nmbu.no/noragric/2021/01/19/dark-clouds-on-the-horizon-post-covid-constraints-for-afghan-food-systems/>).
- Pain, A. and Levine, S. (2024) 'What does it mean to context seriously for rural differentiation? Lessons from Afghanistan'. SPARC Policy Brief. London: ODI.

Additional reading

- Tesfaye, W. and Tirivayi, N (2018) 'The Impacts of postharvest storage innovations on food security and welfare in Ethiopia' *Food Policy* 75: 52–67 (<https://doi.org/10.1016/j.foodpol.2018.01.004>).

About this series

This paper is based on a briefing note written for the United Kingdom's Foreign, Commonwealth and Development Office (FCDO), and this version is published with their permission. It is one of a series of five papers designed to help decision-makers integrate a better understanding of Afghanistan into their work. The other papers in the series cover Community Development Councils, markets, informal credit and rural differentiation.

Based on the analysis of these five papers, an overview paper examines why it has proved so hard for aid actors to take context seriously (Levine and Pain, 2024). It identifies 'Ten traps to avoid if aid programming is serious about engaging with context: lessons from Afghanistan'. Although based on a study of the failure to take context seriously in Afghanistan, the paper is written to be of wider relevance.

Funded by



This material has been funded by UK aid from the UK government; however the views expressed do not necessarily reflect the UK government's official policies.