



Conditional cash assistance to build resilience against water scarcity in the West Bank

Creating employment opportunities and enhancing adaptive capacities to recurrent drought within protracted crises



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Objective

This good practice fact sheet highlights the need to address vulnerable beneficiaries' limited access to water sources, as well as lack of financial resources and capital investment.

Currently, water scarcity in the West Bank and Gaza Strip is characterized by challenges both of an environmental and human-made nature. Declining levels of water access, resulting from the combined effects of drought, dropping water tables and Israel-imposed restrictions on the construction and rehabilitation of wells and water resources; has greatly impacted

Palestinian water use. As water is an integral component of the agriculture sector, its availability at an acceptable and consistent level is a prerequisite for building sustainable and resilient livelihoods. In the West Bank, drought conditions have a high possibility of recurrence, thereby threatening the livelihoods of thousands of families dependent upon agriculture for their livelihoods. Women and children often charged with the responsibility for collecting water have been particularly affected. Conservative estimations show that for every USD 1 invested in household cistern construction, at least USD 17.5 worth of water is saved. Limited access to water networks and reoccurring periods of drought pose a threat to food security in several areas of the West Bank. In these vulnerable areas, FAO has been enabling thousands of families from 2011 to 2013 to construct their own cisterns, allowing them to meet their water needs for both domestic and agricultural purposes. With a reliable and more affordable water source, families are able to establish backyard gardens, supplying them with fresh produce either for their own consumption or to be sold at market. Further, a buffer of water storage capacity is created, allowing households to buy water in greater quantities and at significantly cheaper prices per cubic metre.

Geographical coverage

This good practice fact sheet is based on experience implemented from 2011 to 2013 in the West Bank governorates of Jenin (north of WB) and Hebron (South of WB). Since then the practice has been replicated in many other parts of the West Bank.



Introduction

Drought-like conditions coupled with chronic water shortages due to restricted access of Palestinians to their water resources has been threatening the livelihoods of thousands of poor farming families in the West Bank, especially those dependent on rain-fed crops and livestock as an indispensable supplementary source for their income and food security. As a result, herders and farmers have been utilizing negative coping mechanisms such as selling productive assets to deal with their growing marginalization. This further erodes their ability to provide for themselves in the long term, making them even more vulnerable.

Under this practice, the following problems are addressed: limited access to water resources and poor resource management; erratic and reduced rainfall; and lack of financial resources and capital investment.

As such, there is a need for a comprehensive response to water scarcity and diminished local food production stemming from declining access to water in the West Bank over the last decade. Supplementary irrigation for crops during critical periods of the year has been essential in helping farmers to sustainably alleviate this downturn in productivity. When household water cisterns are used, a buffer of water storage capacity is created, allowing households to buy water in greater quantities and at cheaper prices per cubic metre.

Given the West Bank's geography and topography, rainwater harvesting and storage through the construction of cisterns offered the most feasible and cost-effective way to ensure availability of and access to water. Whereas before water was bought from trucks at high prices, or hand-carried by women over long distances, an affordable water source close to the community frees financial resources, and time – of women in particular – for productive activities.

The practice's objective was to protect and improve the livelihoods and food security of poor rural families by sustainably improving the availability and management of water for agricultural and domestic purposes in rural areas of the West Bank and by creating jobs and enhancing income-generating opportunities for both men and women.

To address this limited access to water sources and lack of financial resources and capital investment, the temporary jobs were created for beneficiaries targeted under this practice across multiple projects, but also skilled and unskilled rural labourers. Under the practice FAO has disbursed millions of dollars in cash to thousands of beneficiaries for the construction of thousands of completed cisterns, built in accordance with required technical specifications. During the cistern construction process, each worker averaged 15 working days.

The philosophy behind this practice is that during any infrastructure construction project of this scale, a substantial amount of money is going to be spent on contractors, inputs and labour; so why not divert these resources into the very communities which are being served.

Though this may not be an “emergency” context in the traditional sense, these households are subjected to various shocks as mentioned above. Cash assistance is able to provide access to water at reduced prices, thus improving their level of food security and resilience in the face of hardship, while simultaneously providing decent work. Further, when household cisterns are used, a buffer of water storage capacity is created not only through harvesting rain water but also by allowing beneficiaries to buy water in greater quantities and at cheaper prices per cubic meter (m³).

Stakeholders and partners

The European Union was the donor funding the USD 2 million project from which this practice occurred. FAO managed the project in consultation with the Palestinian Ministry of Agriculture's (MoA) technical unit, which was consulted to identify the scope, modalities and geographic areas of the project. Local Palestinian NGO partners were contracted to carry out necessary trainings.

The beneficiaries of the good practice are poor and vulnerable rural families (small- and medium-scale farmers and small- and medium-scale herders) that rely completely or partially on agriculture and livestock

production for their own food security and livelihoods. Vulnerable farming families in the targeted areas were selected based on: poverty level; access to water; family farm self-employment; family's main bread winner; agricultural practices and knowledge; and readiness to commit to the project. Priority was given to destitute families, poor farmers, people who were noticeably disabled or unemployed, female-headed households and casual workers. Households headed by women account for roughly 32 percent of total beneficiaries. Many of these households were selected due to their vulnerable status (i.e. suffering from severe poverty, divorced, widowed or with disabled family member).

Gender issues were taken into account in livelihood assessment, analysis and response. As women and men contribute to the sustainability of their households in specific ways, their coping mechanisms are also different. Women in the West Bank and Gaza Strip play a prominent role in agriculture; depending on the nature of agricultural activity, up to 80 percent of agricultural work is done by women in addition to their household duties. Women also contribute largely to the economy through paid employment in agriculture and the industry.. However, men are usually considered heads of households and main decision-makers over family finances.

Methodological approach

An alternative water source is the top priority of vulnerable farming and herding families in the West Bank and Gaza to mitigate the constraints mentioned in above sections. This practice originates in a project which was defined in full alignment with the Agriculture Sector Strategy 2011-2013, that foresaw the building of 10 000 water harvesting cisterns as one of the national priorities for building household and community resilience to water shortages and also as a country adaptation modality to global climate change. This practice responds to the findings of the needs analysis frameworks of food security and agriculture sectors; and builds on the lessons learned from previous initiatives and projects implemented by FAO and other partners in the WBGS.

The delivery approach of "Conditional Cash Assistance to Build Resilience against Water Scarcity " was designed to maximize the use of local capacities and job creation within the targeted communities and contributes to the level of positive spill-over effects on the income and job creation within local economies. The beneficiaries of the infrastructure assistance were required to contribute to the works, ensuring a high level of commitment.

Compared to traditional tendering using construction companies, the methodology of "Conditional Cash Assistance" proved to be very efficient in terms of costs and timely delivery. This is especially clear, since there are no specialized contracting companies in the WBGS who are capable of implementing such large-scale interventions across extremely remote areas with a wide geographic distribution. In this manner, a decentralized model had to be employed.

The implementation process is as follows: An **announcement** on the project is made in the affected community via the municipality, local media and religious institutions, over the course of one week. These announcements contain information about the project including its location, methods and selection criteria for beneficiaries. The following week **applications are submitted** to the Ministry of Agriculture or a local NGO partner who is aiding implementation in the field. The information from these **applications is then entered into a database** daily during the application submission period. After the week-long application submission period, a **two-week long data analysis** is carried out which results in a baseline survey report, **giving an accurate depiction of existing economic and food security levels** prior to project implementation in the community.

Primary beneficiary selection is started in tandem with the data analysis to not waste time, and within two weeks, of beneficiary selection, verification is conducted along with final beneficiary selection. Specific attention was given for targeting women-headed households.

After beneficiaries have been selected, the **work site is verified** and an agreement and **commitment is signed** by them according to if they are rehabilitating or constructing a cistern. Excavation is then started if the **cistern is being built – or cleaning/repairing** is begun if the cistern is being rehabilitated. After excavation or cleaning/repairing is completed, the beneficiary is to inform the site engineer within one week in order to receive payment. **Payment is split into two parts in order to ensure completion** of all work and to facilitate the technical verifications which any infrastructure project such as this must be subjected to. For this first phase of work, the site engineer must certify that the work done is up to **standards**. After verification, FAO processes the check to be issued within 20 days to the beneficiary.

For newly constructed cisterns, the plastering/finishing of the structure is then carried out by the beneficiary, and the site engineer is informed so he can verify the work. After verification, the **Completion of Work certificate** is issued along with the **final payment**. It is worth mentioning that the Completion of work Certificate is only signed after verification by the Cistern Inspection Committee which consists of representatives from the Palestinian Ministry of Agriculture, FAO, beneficiaries themselves and other local NGOs/CBOs.

The project also carried out tailored **trainings and technical support** for the targeted beneficiaries on good agricultural practices including integrated crop management, water management and water use optimization in irrigation. Beneficiaries were also trained on how to clean and repair their constructed/rehabilitated cisterns.

Validation

The process of community and beneficiary selection was conducted in close cooperation with the local village councils (VC), local NGOs and the MoA. The targeted localities were selected based on clear and transparent criteria that are both social and technical. The criteria on the socioeconomic vulnerability of people include family income and whether it is a female-headed household, to name a few. The technical criteria include the availability of supplies and suitability of the family's location and assets. The VCs played an important role in the validation of applications, which inter-alia, assessed different socio-economic criteria. Local engineers conducted field visits to all locations to assess the feasibility and later on to verify that the technical requirements were respected.



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The beneficiaries are required to make a contribution to the project, which amounted to about 40% of the estimated cost and was provided in-kind with unskilled labor. Following a two-step administrative and financial verification system outlined above, the beneficiaries were paid for the remainder of the cost. This yielded an overall higher capacity potential for rainwater collection.

The overwhelming response during the beneficiary selection process, resulting in additional beneficiaries proved that the needs were correctly assessed and the activity targeted them correctly. After the work was performed and the cisterns established/rehabilitated, beneficiaries gave an overwhelmingly positive response.

An analysis of sex-disaggregated data validated the process from a gender perspective. In terms of mainstreaming gender considerations throughout all project activities, with women-headed households composing roughly 32 percent of total project beneficiaries directly targeted. Many of these households were selected due to their status as special cases (i.e. suffering from severe poverty, divorced, widowed or with disabled family members, etc.)

Impact

For beneficiaries, the impact of this practice is twofold, as they gain a sustainable water/source and storage area, and also 15 days of decent work. Further, the impact has follow-on economic benefits of the practice are also clear for related contractors or suppliers whose inputs are needed to construct cisterns such as cement and steel companies. In many cases, the beneficiaries themselves were able to work on their own cisterns.

The constructed and/or rehabilitated cisterns are considerably durable and, if maintained properly, are expected to have a roughly 50 year lifespan. Annual maintenance requirements are limited, as each cistern only requires cleaning once a year followed by minor additional plastering when needed. In general, annual cistern repair or cleaning will not take more than four hours when performed by one person, or two hours when performed by two people. Repair costs are low (roughly USD 20–30 per year).

Each beneficiary family saves roughly USD 200 every month (USD 2 400 annually) on water costs, through rainwater harvesting.

Whereas men formed the main part of the beneficiaries of the cash transfers, women benefited by having a more secure and affordable access to water from rainwater harvesting, for both domestic use as well as to enable the setting up backyard gardens. According to a project survey, 80 percent of the work done in the gardens was performed by women, to grow vegetables for sale as well as for home consumption to improve family nutrition.

Innovations and key success factors

Innovation took on two different aspects here. The first was the modality, and the innovation of it was the creation of decent work and economic revenue in the more general effort of creating a sustainable and cost-effective water storage space. This practice is innovative because of its vertically integrated approach, where the beneficiary is responsible for the construction of their own structure, and then using and maintaining it after the project cycle has completed. Further, this promotes personal investment in the project activity.

The design of the cisterns was also an innovative aspect, being able to adjust the techniques of building cisterns. Depending on the soil depth and rock characteristics of the cistern construction sites, engineering supervision was provided to help beneficiaries design their cisterns as either pear-shaped (shallow soil and hard rock) or cube-shaped (deep soil and loose rock). This supervision was mandatory for all rehabilitated and constructed cisterns to ensure that recommended technical specifications were followed. Water harvesting is taken from the roof of the house and also from agricultural land.

Some farmers even used the cisterns as foundations for expansion of their homes, helping them to enlarge their existing living space.

Constraints

Beneficiaries and the project team faced some difficulties during the construction of the cisterns as some of the physical terrain was unwelcoming (land made of hard rocks which made cistern excavation very expensive and time consuming). However, a solution was found that enabled the team to adhere to the required technical specifications (e.g. constructing cisterns partially above-ground in some sites where bedrock was extremely difficult to excavate due to its density). This was only applicable for a few cisterns.

Based on the traditional gender roles, men are considered as the main decision-makers within the households, which hindered the participation of women in the trainings, particularly in the more conservative areas. To overcome this socio-cultural obstacle, FAO successfully organized training sessions specific for women.

Lessons learned

More in depth beneficiary selection should be taken into account in other communities where this practice is enacted, since economic context has changed in various ways over the years there (losing work in Israel, etc.). These beneficiaries may have some of the trappings of a higher income group (stone houses, etc.) but they do not have any money.

Further, during project implementation, it became clear that dynamics within communities differed, with some communities requiring more in-depth explanations of project activities and others noticeably less. Some of the communities were more conservative, and would require more attention to raise awareness on gender issues and women's participation in the activities.

Through the training courses provided by the project, beneficiaries' standard of living improved as they were able to dedicate a greater part of their household budget to other uses due to savings from reduced water costs. Having access to a large storage space enabled beneficiaries to lower their overall water costs by being able to purchase more water at once.

In order to enhance gender awareness and improve gender balance, the project team endeavored to prioritize women in activities as much as possible, mainly through directly targeting women-headed households. It would be also important to assess what measures should be in place in order to ensure women in households headed by men fully benefit from the activities, particularly as financial decisions in these families tend to be made by men. In future programmes it would also be important to assess the potential to involve women closely in the management and decision-making structures over the use of the cisterns managed by the community, to ensure women have an equitable say on the siting of the cisterns, payments, and other related arrangements.

Sustainability

The project's impact exceeded the planned targets. Availability of and access to water improved for some of the most vulnerable farmers in the West Bank. The project contributed to an increase in agricultural income, as well as longer-term efforts to boost food security. Furthermore, the project was able to involve diverse stakeholders, including members of local civil society, while the adapted cash assistance approach injected cash into the local economy.

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Extension services from the Ministry of Agriculture or local NGO partners for follow up in the field with household visits are also a good practice to enhance sustainability.

The constructed and rehabilitated cisterns are durable and can last an average of 50 years with annual maintenance. Annual cistern repairing or cleaning takes only four hours when performed by one person and two hours when performed by two people. The project has injected new techniques and skills within the targeted communities through the delivery of intensive trainings. These techniques, which are sustainable in nature, will help the targeted beneficiaries and their communities to effectively utilize their water resources by rationing and optimizing water use.

From an economic point of view, for every USD 1 invested in household cistern construction, at least USD 15.6 worth of water is saved. The total cost of this investment is recovered in 3.2 years. The beneficiary's own in-kind contribution to the construction is recovered in less than a year. Savings on water cost per annum reaches to a net average of USD 1 300, freeing a significant amount of funds to meet other household needs (healthcare, education, food, etc.) or to allow the household to save for future investments. Over the roughly 50 year lifespan of the cistern, it collects and makes available a total of USD 57 000 worth of water for both farming and domestic use.

Environmentally, in addition to collecting runoff rainwater for productive purposes, water harvesting is a productive form of conserving both soil and water.

Replicability and up-scaling

Building upon the experience of this project, this good practice has been replicated across the West Bank under four projects (2012-2015) funded by Canada and Japan and thousand of beneficiaries have been assisted to restore or establish their productive assets and capacities.

The practice can indeed be scaled up or replicated, given the local presence of water scarcity or lack of management. Rainwater collecting cisterns not only secure water for household consumption and agricultural production, they also provide longer-term, sustainable support to the food security of beneficiaries. In addition, cisterns can provide an essential water reserve in times of emergency and/or breakdown of public water supply systems – particularly during natural disasters or times of conflict.

Moreover the practice can be applied to any activity that requires manual labour.

However, the usefulness of rainwater harvesting cisterns depends upon two things: the frequency and amount of rainfall, and also the ability of its owner to buy large amounts of water at one time in order to save

money. This being said, it is not a dependable water source during prolonged drought, but could sustain household savings by reducing the cost of tanked water.

In a scaled-up context, community water reservoirs utilize the same (or similar) concepts of large-scale water storage, though it is to be used only for agricultural purposes. FAO has built two community-level reservoirs that play a major role in the management and fair distribution of water for irrigable lands in the northern West Bank. They also give opportunities to ration and optimize water used in irrigation, thus decreasing water costs per cubic metre up to 50 percent and in turn increasing farmers' profits up to 100 percent per unit area.

For example, the insufficient and irregular agricultural water supply in the West Bank village of Tamoun forced farmers to purchase water transported by tractors to fill their individual water storage pools. These high maintenance and operating costs – and reduced productivity due to irregular water supply – made their crop growing activities less profitable. FAO constructed four large water reservoirs, connected to ground water wells. The new “by gravity irrigation scheme” that was introduced to Tamoun’s community is used by 80 households in the village, who now pay only half of the price they used to spend on irrigation water. A more reliable water supply has simultaneously increased their fields’ productivity, doubling their profit margin.

Conclusion

In conclusion, conditional cash assistance to build resilience against water scarcity is a good practice, carried out on two distinct levels. **In the long-term, it provides vulnerable farmers and herders with a sustainable and badly needed auxiliary source (and storage area) of water for both household and agricultural use. On an individual level, it gives these needy families a chance to gain working days, be paid a decent wage for their work, and also adds an infusion of capital to the local economy through the purchase of supplies or the use of contractors.** Furthermore, this practice has shown that a hands-on approach fosters beneficiary investment in and ownership of the resulting structure. Since they have been so involved with its building from start to finish, they are more likely to maintain the structure and use it.

Mrs Rudaina Dababseh (32, Nuba, Hebron governorate) heads her household since her husband is unable to work from an injury. The cistern has allowed her to cultivate a home garden with vegetables and fruit trees for home consumption and sale at the market:

Before we had the cistern, I had to haul buckets of water on top of my head and by hand from a well. I didn't have enough water, so my trees were dry and suffering. Thank god we have a cistern now to give our house the water we need, it brought new life to our family. You can even taste the better quality compared to tap water. A cup of tea made with the cistern's water tastes much better than one made with tap water.

Mrs Shadia Tarman (28 Nuba, Hebron governorate) also heads her household and used the resulting water from her cistern to increase her income through home gardening:

We never had a regular supply of water, sometimes we would go a week or more without it. We are not connected to a water network, so we had to buy water from tanker trucks at a high price. Since we built the cistern, things have improved, it helps us meet our needs all year around through summer and winter. Now we can plant what we need in our garden.

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