

Solar Energy for Drying Crops, Occupied Palestinian Territories

- ★ Renewable energy
- ❖ Technical capacity development
- ❖ Institutional capacity development
- * Poverty alleviation (MDG 1)

PROJECT DATA

Name: Utilizing solar energy for drying agricultural crops and medicinal herbs

Implementing Organization: Union of the Agricultural Work Committee (UAWC), Gaza

Location: Gaza, Occupied Palestinian Territories

SGP contribution: \$32,500

Start Date: August 2001

ENERGY OVERVIEW

Energy Resource: passive solar

Technology: crop dryers

Application: drying agricultural produce

Sector: small-scale commercial

Cost of each system: \$1000

Total capacity: dries fruit/herbs in several days

Number Served: 65 women in 17 cooperatives

BACKGROUND

Within the Occupied Palestinian Territories many homes are not connected to the electricity grid, and grid-based electricity is costly for those who are connected to it. Solar and other forms of renewable energy can offer independent energy sources for certain applications that otherwise might not be possible if they depended upon scarce electricity. Reflecting the difficult economic situation throughout Gaza, employment and income-generating activities are very scarce in Deir al Balah and Abassan Al Jadidah, the communities covered by this project. Thus, there is great benefit in linking renewable energy with income-generating activities. Women in this community have traditionally dried herbs in the sun, but this can be time-consuming and takes away their color and freshness. Solar dryers can offer improved product quality in a shorter time period.

PROJECT DESCRIPTION

Overview

This project has started 17 small women's cooperatives that use solar dryers to prepare fruits, herbs and other produce for sale in local markets. The project has also conducted workshops and informational sessions to disseminate the solar dryers to other neighboring communities.

Implementation

The Union of Agricultural Work Committees (UAWC) initiated this project by seeking women in Deir Al-Balah and Abassan Al Jadidah who were interested in crop drying and could main-



Fruits, herbs and other produce prepared for sale by small women's cooperatives using solar dryers (Gaza, Occupied Palestinian Territories).

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tain a solar dryer in their homes. UAWC's women's production unit manager has played a key role in developing the project, since she has intimate knowledge of the people in these communities and their needs, particularly the women. Solar dryers were installed in the backyards of selected women's houses, and for each one a cooperative consisting of 3-5 women was formed. These women pool their crops and herbs, growing some themselves and buying others at the market. They dry them in the solar dryer, then package and sell them, sharing the income they earn. UAWC has also created brochures about the solar dryers and their benefits, and distributed them at workshops for neighboring communities in order to disseminate this technology.

Technology

The solar dryer is equipped with solar panels on the outside and trays for fruit and herbs on the inside. The trays are filled with fresh produce, and then left to dry, which takes only a few days. The dryers were designed by a local consultant in conjunction with UAWC, and they are being manufactured locally.

Environmental Benefits

Global: Previously, women would dry some produce in the sun. Since takes a long time, women would often use gas-powered ovens to accelerate the process. Adoption of the solar dryer has replaced this use of fossil fuels. In addition, the solar dryer has opened up new income-generating opportunities, since it produces higher quality dried produce in a shorter amount of time. Therefore, as the project is scaled up, it may enable women to generate income from this renewable energy-powered activity instead of from another activity that depletes energy or other natural resources.

Livelihood Benefits

Income generation: This project helps women generate additional income. The husbands of many women participating in the cooperatives are unemployed, so the income generated from this project is critical for these families. Currently, 65 women are working in 17 cooperatives.

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Capacity Development

This project involves significant capacity building for the 65 women involved in the cooperatives. UAWC has conducted workshops, totally 70 training hours, for these women covering topics such as how the solar dryer works and how to package and market their products. Institutional capacity building also took place when an SGP planning grant was used to hire a specialized local consultant to design the solar dryers, together with a team from within UAWC. This helped to build local capacity to produce the equipment.

Partners

This project has worked very closely with the women of these communities, and has established 17 new women's cooperatives. These cooperatives are the most important partners.

LESSONS LEARNED

Environmental Management

This project illustrates a productive use of solar energy. Although the project is not displacing existing economic activities that create emissions, the use of solar dryers could avoid future emissions by replacing income-generating activities that might have been powered by grid-connected electricity. In other words, these women now have a way to earn income for their families, and are therefore less likely to search for other means of income generation that might also generate emissions.

Barrier Removal

Financial: Each solar dryer costs \$1000, and SGP grants fully covered the cost of the first dryers to demonstrate the use of the technology. Subsequently, a grant from a separate foundation covered the costs of an additional 15 dryers. So far, it does not appear that users are paying for this technology. However, because the solar dryers are linked to an income-generating activity, it should be possible to design a system of loans that could be repaid over time from revenues. Potentially local capacity for building the solar dryers could be developed, which would reduce costs.

Information/awareness: The project introduced a new technology to this region and also built the capacity of the women's cooperatives to understand and use it. The grantee's produc-

tion of booklets describing the design and use of the solar dryers will be of great benefit for future efforts to disseminate this technology and start similar businesses.

Gender: This project works almost exclusively with women. Its main outcome is the provision of income-generating opportunities for women. Women have gained important technical and business skills through the project, and are now running these cooperatives on their own. This improves their ability to undertake other similar activities in an independent manner.

Institutional: The projects' establishment of women's cooperatives is the key to reduction of institutional barriers. These are now independent income-generating organizations which could undertake other activities should the need arise (although there is currently no information about whether or not they are doing this).

Scaling Up

The grantee has clearly planned activities geared toward scaling up the project, such as the creation of brochures describing the solar dryers and their use, and the organization of seminars to spread awareness about them. There appears to be interest on the part of other funding organizations in expanding solar dryer efforts in the area. The German Fund for Palestinian NGOs is currently funding the same grantee, UAWC, to build 15 solar dryers and to train women to use them and market their produce. The Canadian International Development Agency (CIDA) is also in discussions with UAWC regarding the SGP project, and has asked UAWC to submit a proposal to them to expand the solar dryers effort.

SOURCES CONSULTED

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