



Ghana Small-Scale Irrigation Project

April 2002 — March 2005

Tens of thousands of small farmers in Ghana are active in the irrigated vegetable sub-sector during the dry season. While most pre-conditions for increased vegetable production exist - the availability of land, water, labor, capital, non-irrigation inputs to production, and markets - an affordable, high capacity means of water lifting and development are not available to small producers. The treadle pump and the tubewells promoted by EnterpriseWorks across West Africa are engineered not only to lift water with minimum effort, but just as importantly they are designed to be inexpensive.



Project Budget
\$930,000

Primary Funders
USAID/Ghana

In late 1999, the Food and Agriculture Organization (FAO) began a pilot project on irrigated horticulture in Ghana through the Special Programme on Food Security. This component, managed by EnterpriseWorks, began with the importation of 40 treadle pumps from Benin. Prior to the pump, farmers irrigated their fields using water drawn from wells with a rope and bucket. EWW discovered that farmers had increased their plot sizes by two to five times after one gardening season of using the pump. As a result, they have increased their incomes from the sale of vegetables, drawing upon already existing market linkages.

This project will expand on this pilot project by making the treadle pump and other low-cost irrigation equipment locally available to smallholder farmers. This will involve the training of local manufacturers to fabricate and install the equipment and the launch of a local and mass media marketing campaign. As manufacturers become proficient at building high-quality products and maintaining a viable business, farmers will be able to access the equipment and services long after project funding is completed.

OBJECTIVES

- Ten manufacturers trained
- Approximately one hundred demonstrations conducted
- Anticipated Environmental and Economic Impacts
- An estimated 600 farm workers trained in irrigation equipment use and maintenance
- Sales of approximately 300 pumps

PROGRESS REPORT

Advertisements and publicity have boosted sales. After the manufacturing and distribution

components of the project were functioning smoothly, EWW followed its marketing strategy that has proved successful in many other African projects. The marketing approach utilizes an attractive logo, informational leaflets, t-shirts and caps, roadside signs, radio advertisements and public information programmes. The target number for demonstrations conducted and manufacturers trained has been achieved to date.

Streamlining treadle pump manufacture. The standard treadle pump uses pump cylinders rolled from sheet metal. However, in Ghana a low cost steel tubing of the correct dimension was readily available. This tubing provides a lower cost option for the manufacturers in Ghana, providing them with a greater profit margin. Additional advantages of the low cost tubing are: the pump takes less time to make, the pump is more efficient (since the cylinders are true and therefore seal well with minimum losses due to friction), the cylinder can be made using unskilled welders. The artisans will be trained in both methods of manufacturing as a precautionary measure should the supply of tubing become unreliable.

Varying availability and price of materials for the manufacturing of the piston seal for the treadle pump in Ghana provoked much trial and error in deciding upon the best option. Finally, after several grades of new rubber seals were formulated and tested, a low price semi-synthetic model was chosen. The supplier is a small-scale entrepreneur, and EWW/Ghana continues to assist him to manufacture the seals in a methodical way in order to ensure a consistent product.

Environmental issues affect the project. Officials in the project implementation area are concerned about the status of the aquifer that supplies the farming water. They are concerned that the use of motorized pumps with tube wells are disturbing the aquifer equilibrium, and could possibly result in the drying up of the shallow wells, or the intrusion of saline water into the wells. A proposal has been submitted that will require all tube well owners to obtain a permit before they can construct a tube well. This permit is renewable after every 3 months and depending on the aquifer level, a permit will either be withdrawn or renewed. EWW staff will continue to be an active partner in these issues, as we have a sincere interest in maintaining the environment and are aware that the treadle pumps are far less wasteful of water than motorized pumps.