

## Innovative Design of Irrigation Management by the Grameen Bank in Bangladesh

Against the backdrop of the failures of the collective management of irrigation tube wells by landless groups, the Grameen Bank staff took up direct management of deep tube wells (DTWs) in 1987. In the central district of Tangail, the Grameen Bank has so far bought about 100 DTWs, and they are now being managed by its own staff on a commercial basis. The bank has also started similar management programs with about 2,000 old and new DTWs, purchased in the Rajshahi Barind Tracts and in Dinajpur District in the northern parts of the country.

As the program is fairly new, there has not yet been any serious evaluation. It may, however, be useful to mention that the present author is engaged in research on Grameen Bank DTW management and that part of the research is being covered in a masters' thesis under his supervision. The purpose of this note is to present a brief account of the program for the FMIS network members.

DTWs are run and water is sold to farmers under the direct management of the bank staff. For each DTW, one machine driver and two drainmen are contracted on a seasonal basis. The responsibilities of the bank officers are to arrange oil, fuel and repair facilities, supervise on-farm water distribution, advise farmers about *boro* rice production, collect the share of rough rice from fields, and thresh, sell and store rice. A one-fourth share of the crop is usually charged for water cost, but when seeds, fertilizers, and insecticides are also provided along with water, one-third of the crop is charged.

The management of DTWs is divided into three distinct stages. The first stage involves activities such as construction of drains for water conveyance, making agreements with farmers for providing irrigation water, repairing engines, and building a stock of diesel and spare parts. In the second stage, the bank workers advise farmers to raise seedlings, puddle land, transplant

seedlings, and apply fertilizers. The final stage involves the collection of the share of the harvested rough rice from the fields and arranging for threshing, drying, disposal and storing of the rice.

In operating DTWs in the 1987-88 season, the bank applied three methods for collecting rice from the fields. First, when demand for straw was high at the beginning of the season those who wanted straw carried bundles of reaped rice plants from the fields to the threshing yards, threshed them, and took away the straw. Second, when the demand for straw fell the bank collected the crop from the fields with paid labor, but straw was given away as a payment of labor used for threshing rice. Third, when there was very little demand for straw at the end of the season both collection and threshing of rice were done with paid labor, but the straw was sold.

Understandably, the bank prefers the first system as it reduces harvesting costs and also minimizes the trouble of disposing of a huge amount of straw accumulated in a short period of time.

Most DTWs that were purchased by the bank had been out of operation for a number of years, and therefore running of those tube wells for rice production brought about farmers' confidence and trust in the Grameen Bank management. Many of the tube wells had also low command areas and yields in the initial year, because the bank staff had no previous experience of irrigation management and most farmers were not familiar with irrigated cultivation of boro rice. One-fourth sharecropping exists as a dominant mode of payment for water charged by the private as well as the cooperative water sellers, but the accumulations from water selling in the case of the Grameen Bank will benefit its landless shareholders only indirectly through wage employment and dividends. These and other issues related to the replicability of such a tube-well management program, and its productivity and equity implications, are now being analyzed by the author (M.A.S. Mandal, Associate Professor and Head, Department of Agricultural Economics, Bangladesh Agricultural University, Mymensingh, Bangladesh).